SCHRIEBER LAKE MITIGATION SITE

Project Overview

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

Watershed: Watershed #1 – Kootenai River Basin

Monitoring Year: 2024

Years Monitored: 10th 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 17-18, 2024

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 control and planned beaver dam removal. **Date:** May 1, 2024, October 2024. Weed control efforts by MDT contractor targeted several state-listed noxious weed species in the spring and fall of 2024 including: oxeye daisy, orange hawkweed, common mullein, and spotted knapweed. At the behest of downstream water rights holders, MDT is planning to remove the beaver dam at the outlet of Schrieber Lake in the spring of 2025 to provide sufficient water for downstream water users.

Specific recommendations for any additional corrective actions: The MDT weed-control program will conduct weed treatments in the spring/fall of 2025. MDT has received MFWP SPA 124 approval to remove the beaver dam in the Spring of 2025.

Anticipated Wetland Credit Acres: 13.40

Wetland Credit Acres Generated to Date: 14.35

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 the 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 2024 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 Western Mountains, Valleys and Coast Region (WMVC) Regional Supplement.	Y	Areas that were identified as wetland habitat within the mitigation site meet the three parameter criteria except for three data points which did not have hydric soil indicators. Wetland status was determined based on strong hydrologic and vegetation indicators at these locations.
Wetland Hydrology	Wetland hydrology success will be achieved where wetlands meet the technical requirements established in the 1987 Wetland Determination Manual and the 2010 WMVC Regional Supplement. The presence of primary and secondary indicators observed in the field will be utilized to make a formal determination.	Y	Areas that were identified as wetlands met the definition for wetland hydrology based upon primary and secondary hydrologic indicators observed at the site.
Hydric Soil	Hydric soil conditions are present or appear to be forming.	Y	Hydric soil characteristics have developed throughout all constructed wetlands.
	Soil is sufficiently stable to prevent erosion.	Y	Disturbed soil is stable and does not exhibit signs of erosion.
	Soil is able to support plant cover.	Y	Plant cover is well established across disturbed soils.
Hydrophytic Vegetation	Combined areal cover of facultative or wetter species is 70 percent or greater.	Y	Areas identified as wetland habitat within the mitigation site support a prevalence of hydrophytic vegetation (OBL, FACW, and FAC) with combined areal cover greater than 70 percent.
	State-listed noxious weeds do not exceed 5 percent absolute cover.	Y	State-listed noxious weeds were less than 5 percent absolute cover within wetland areas in 2024.
	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. Removal of the old beaver dam at the outlet of Schrieber Lake is anticipated to lower water levels and inundation across the site, which should allow many of the shrubs and trees to reestablish.
Open Water	The project is intended to provide open water during the spring and early summer within excavated depressions. Open water is defined by USACE as “areas of open water of any depth with less than 5% rooted emergent vegetation, no vegetation, submerged non-rooted vegetation, and/or submerged vegetation rooted in the substrate that does not extend above the water surface” (N. Green, personal communication, May 6, 2020). Open water meeting this definition will, therefore, be considered successful and creditable.	Y	Excavated depressions throughout the entire mitigation area support perennial inundation with an established aquatic macrophyte and evolving emergent vegetative 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 wetlands was estimated at 4 percent and 3 percent, respectively.

	Any area that was disturbed within the creditable buffer zone must have at least 50 percent areal cover of non-weed species by end of monitoring period.	Y	Disturbed areas have established greater than 50 percent cover by non-weed species. Predominately non-native grass species dominated the upland buffer area. Total areal cover of vegetation was estimated to be between 80 and 85 percent.
Weed Control	Weed control will be based on annual site monitoring to determine weed species and the degree of infestation within the site. Control measures based on monitoring results will be implemented by MDT to minimize and/or eliminate the intrusion of state-listed noxious weed species within the site.	Y	State-listed noxious weed species have been identified and mapped during the 2024 monitoring event for weed control efforts in 2025. Weed cover was generally low across the site, with the exception of a few areas that had higher amounts of weeds. MDT's weed-control contractor is scheduled to treat this site in the Spring of 2025 as part of an ongoing weed control program.

Stream Performance Standards				
Performance Standards	**Success Criteria**	**Criteria Achieved Y/N**		**Discussion**
		SC[a]	**CC[b]**	
Bank Restoration Success	Ratings for the streambank will be based on the Proper Functioning Condition (PFC) rating that determines if the area supports a healthy, stable bank area adjacent to the stream: i) Functioning – The streambank supports a healthy and stable bank area adjacent to the river. ii) Functioning at Risk – One or more functions of the streambank are adjusting to changes in the design within the reach area, and more monitoring is needed. iii) Not Functioning – Measurements of the functions indicate that the site is not achieving functional goals.	Y	Y	A PFC assessment was performed during the 2024 monitoring year within three areas of the site (stream reaches are shown in Figure A-2 in Appendix A & PFC forms in Appendix D). Reach SC1's rating was updated to Functional from Functioning – At Risk in 2024 due to improved vegetation establishment along the bank. While the reach is not yet vegetated to the same level as other reaches at the site, the bank has remained stable over the monitoring period, and it is not considered at risk or requiring additional monitoring. See the Stream Monitoring section for additional details.
Riparian Buffer Success	Creditable buffer areas must have at least 50 percent areal cover of non-weed species by the end of the monitoring period.	Y	Y	All riparian vegetation transects exhibited 50 percent or greater areal cover of non-weed species along both Schrieber and Coyote Creeks.
	Combined areal cover of riparian and streambank vegetation communities is 70 percent or greater.	Y	Y	Combined areal cover of riparian and streambank vegetation along Coyote Creek and Schrieber Creek was estimated at 90 percent.
	Noxious weeds do not exceed 5 percent cover within the riparian buffer areas.	Y	Y	Noxious weed cover within riparian buffer areas adjacent to Schrieber and Coyote Creek was estimated at 3 percent and 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 2024.
Coyote and Schrieber Creek Channel Restoration Success	Success will be evaluated in terms of revegetation success. For the purpose of identification, bank areas will extend 3 feet (Coyote Creek) or five feet (Schrieber Creek) up the bank from the Ordinary High Water (OHW) mark. a. Revegetation along the new Coyote and Schrieber Creek channel corridor will be	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 resulted in slower vegetation growth and does not have a majority of deep-rooting vegetation. As a result, Reach 1 of Schrieber Creek has not met all success criteria and is, therefore,

	considered successful when the bank area becomes vegetated with a majority of deep-rooting riparian plant species having root stability indexes ≥ 6. A plant list of the species occurring along the bank areas 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". b. New stream channels will be allowed to naturally migrate within the established floodplain/riparian areas and will be given sufficient room to move and stabilize within the site.	Y/N	Y	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 at the Schrieber Lake mitigation site in 2024, which includes wetlands, open water, and streams, was 55.46 acres, 0.19 acres less than in 2023 (Table 2; see maps in Appendix A). Total delineated wetlands, which include MDT wetlands, USFS wetlands, and riparian buffers decreased by 0.14 acres to 41.94 acres in 2024 (Table 2; see maps in Appendix A)." Following USACE guidance (N. Green, personal communication, May 6, 2020), areas of open water accounted for 12.52 acres of the site, including areas within Cells 1-10 and the preservation area northwest of Schrieber Lake (4.51 acres), Schrieber Lake (7.72 acres), and Schrieber Lake located on USFS property (0.29 acres).

The extensive wetland development at this site results from excavating wetland cells, constructing channel plugs, and restoring meanders and bed elevations for the Schrieber and Coyote Creek channels. Beaver activity, noted for the first time in 2019, contributed to a shift in wetland development within the site. The beaver dam constructed at the outlet of Schrieber Lake has changed the site's hydrologic regime, resulting in an expansion of perennial deepwater inundation in some wetland areas and inhibiting woody shrub expansion in others. Initially, the beaver dam increased open water within the site, accounting for 14.24 acres in 2020. However, native floating and emergent vegetation has established within many of the open water areas, especially within cells 1-10, reducing the open water area to 12.52 acres in 2024.

Table 2. Upland, Wetland, & Aquatic Habitat Acreage Delineated From 2015 and 2019-2024

Habitat Type	2015 Acres	2019 Acres	2020 Acres	2021 Acres	2022 Acres	2023 Acres	2024 Acres
Uplands	52.6	52.6	49.47	49.12	49.17	49.05	49.24
Wetlands							
USFS wetlands (no credit)	1.25	1.25	1.66	1.66	1.66	1.63	1.71
MDT wetlands	37.65	37.65	34.43	35.43	36.77	36.55	36.33
Riparian Buffer (no wetland credit)	3.90	3.90	3.90	3.90	3.90	3.90	3.90
Total Delineated Wetlands	**42.84**	**42.84**	**39.99**	**40.9**	**42.33**	**42.08**	**41.94**
Open Water							
Schrieber Lake* (no credit)	8.26	8.26	8.00	8.00	8.00	7.58	7.72
Schrieber Lake on USFS property* (no credit)	--	--	--	--	--	0.37	0.29
Open Water* (Cells 1-10 & Preservation Area northwest of Schrieber Lake)	N/A	N/A	6.24	5.68	4.20	4.62	4.51
Total Open Water	**8.26**	**8.26**	**14.24**	**13.68**	**12.20**	**12.57**	**12.52**

Habitat Type	2015 Acres	2019 Acres	2020 Acres	2021 Acres	2022 Acres	2023 Acres	2024 Acres
Streams							
Schrieber & Coyote Creeks (no wetland credit)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Wetland and Aquatic Habitat	**52.1**	**52.1**	**55.23**	**55.58**	**55.53**	**55.65**	**55.49**
Project Area	104.70	104.70	104.70	104.70	104.70	104.70	104.70

*Schrieber Lake and other open water areas all meet the USACE definition of open water and are mapped in Figures A-3 to A-5 in Appendix A.

Vegetation – A total of 126 plant species have been identified at the site between 2015 and 2024, with five new wetland species and two new upland species identified during the 2024 monitoring event. Four wetland, five upland, and one open water community type were identified and mapped at the mitigation site in 2024 (Figure A-3, Appendix A). Dominant plant species observed within each community are listed on the Wetland Mitigation Site Monitoring form (Appendix B). The vegetation community types and open water community type identified on the site in 2024 include the following:

- Upland Type 1 – *Elymus repens / Bromus inermis*
- Upland Type 5 – *Pseudotsuga menziesii / Larix occidentalis*
- Upland Type 9 – *Crataegus douglasii / Symphoricarpos albus*
- Upland Type 13 – *Alopecurus* spp. / *Phalaris arundinacea*
- Upland Type 14 – *Alopecurus pratensis*
- Wetland Type 3 – *Phalaris arundinacea / Carex* spp.
- Wetland Type 8 – *Carex* spp.
- Wetland Type 10 – *Typha latifolia*
- Wetland Type 15 - *Betula pumila / Salix* spp.
- Open Water Type 11 – Open Water / Aquatic macrophytes (considered open water, not classified as an emergent vegetation community type)

A notable shift in species cover and dominance due to the active beaver dam impounding surface water continued in 2024. Inundation levels within the wetlands averaged 1.5-2.5 feet, similar to the conditions observed in 2023. The increase in inundated acreage since the creation of the beaver dam has reduced the overall coverage of reed canarygrass and broken up the former monoculture, which has allowed for an increase in native herbaceous species such as sedges (*Carex* spp.) and water smartweed (*Persicaria amphibia*). Extended periods of flooding have been shown to reduce non-native reed canarygrass cover, germination, and rhizome production effectively (Jenkins et al. 2008; WRCGM 2009; Waggy 2010), which allows a greater diversity of native vegetation to establish. However, the increase in inundation has reduced the cover of native shrubs, especially in the Wetland Type 2 – *Betula pumila/Salix* spp. carr (shrub fen) in the southwest part of the site and in community types that were removed in previous years because of a loss of shrub cover.

Vegetation cover was measured along three belt transects (T-1, T-2, and T-3) in 2024 (Figure A-2, Appendix A). Photographs of the transect endpoints are provided in Appendix C. Perennial surface water observed within the wetland vegetation communities along all three transects (i.e., Wetland Types 3 and 8) that exhibited greater than 5% emergent vegetation and were less than 0.1 acres in size were classified as part of the surrounding hydrophytic vegetation community and not as open water. Instead, the “Estimated % Unvegetated Surface Water” value in Tables 3 through 5 estimates cover of these small areas of perennial surface water observed within wetland plant communities along the transects. The “% Transect Length Comprising Open Water” value summarizes the length of the transect occupied by Open Water Type 11.

Table 3 summarizes the data for T-1 from 2016 and 2021 through 2024. T-1 is 284 feet long and intersects WT 3 and 10. The transect was entirely within hydrophytic vegetation communities in 2024. Hydrophytic vegetation cover accounted for 60 percent of the transect length in 2024, the same as in 2023. Unvegetated surface water, a component within the communities, was 0.5-2.5 feet deep and accounted for the remaining 40 percent of the transect in 2024.

Table 3. Data Summary for T-1 From 2016 and 2021 through 2024 at the Schrieber Lake Site

Monitoring Year	2016	2021	2022	2023	2024
Transect Length (feet)	**284**	**284**	**284**	**284**	**284**
Vegetation Community Transitions Along Transect	3	2	2	2	2
Vegetation Communities Along Transect	3	1	1	2	2
Hydrophytic Vegetation Communities Along Transect	3	1	1	2	2
Total Vegetative Species	9	6	7	8	8
Total Hydrophytic Species	8	6	6	8	8
Total Upland Species	1	0	0	0	0
Estimated % Total Vegetative Cover	100	75	60	60	60
Estimated % Unvegetated Surface Water	0	25	40	40	40
% Transect Length Comprising Hydrophytic Vegetation Communities	100	97.2	97.2	100	100
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	0
% Transect Length Comprising Open Water	0	2.8	2.8	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0

Table 4 summarizes the data for T-2 from 2016 and 2021 through 2024. T-2 is 280 feet long and traversed a single community type, WT 8. The transect was entirely within hydrophytic vegetation communities in 2024. Hydrophytic vegetation cover accounted for 80 percent of the transect length in 2024, the same as in 2023. Unvegetated surface water, a component within the communities, was 2-2.5 feet deep and accounted for the remaining 20 percent of the transect in 2024.

Table 4. Data Summary for T-2 From 2016 and 2021 through 2024 at the Schrieber Lake Site

Monitoring Year	2016	2021	2022	2023	2024
Transect Length (feet)	**280**	**280**	**280**	**280**	**280**
Vegetation Community Transitions Along Transect	1	1	1	1	1
Vegetation Communities Along Transect	2	2	2	1	1
Hydrophytic Vegetation Communities Along Transect	2	2	2	1	1
Total Vegetative Species	5	6	7	5	6
Total Hydrophytic Species	5	6	7	5	6
Total Upland Species	0	0	0	0	0
Estimated % Total Vegetative Cover	100	85	80	80	80
Estimated % Unvegetated Surface Water	0	15	20	20	20
% Transect Length Comprising Hydrophytic Vegetation Communities	100	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	0
% Transect Length Comprising Open Water	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0

Table 5 summarizes the data for T-3 from 2016 and 2021 through 2024. T-3 is 584 feet long and intersects WT 3 and WT 8. The transect was entirely within hydrophytic vegetation communities in 2024. Hydrophytic vegetation cover accounted for 80 percent of the transect length in 2024. Unvegetated surface water, 0.5-2 feet deep, accounted for the remaining 20 percent of the transect in 2024.

Table 5. Data Summary for T-3 From 2016 and 2021 through 2024 at the Schrieber Lake Site

Monitoring Year	**2016**	**2021**	**2022**	**2023**	**2024**
Transect Length (feet)	**584**	**584**	**584**	**584**	**584**
Vegetation Community Transitions Along Transect	2	1	1	1	1
Vegetation Communities Along Transect	3	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2
Total Vegetative Species	11	6	6	6	9
Total Hydrophytic Species	10	6	6	6	9
Total Upland Species	1	0	0	0	0
Estimated % Total Vegetative Cover	100	90	85	80	80
Estimated % Unvegetated Surface Water	0	10	15	20	20
% Transect Length Comprising Hydrophytic Vegetation Communities	94	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	6	0	0	0	0
% Transect Length Comprising Open Water	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0

The presence of species classified as noxious weeds in Montana are mapped in Figure A-3 in Appendix A. 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*), dalmatian toadflax (*Linaria dalmatica*), oxeye daisy (*Leucanthemum vulgare*), St. Johnswort (*Hypericum perforatum*), and field bindweed (*Convolvulus arvensis*). The most common noxious weed species observed on site was Canada thistle.

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 belt transects, woody planting survival was estimated well below the required 50 percent survival. Woody survival is inhibited by a variety of factors, including competition with herbaceous vegetation (particularly non-native reed canarygrass), perennial inundation and/or extremely saturated soil conditions, herbivory by ungulates and rodents, and previous herbicide applications on adjacent noxious weed infestations. No natural recruitment of woody plants has been observed within the site's wetlands due to inundation caused by the beavers. However, some natural recruitment of willows is beginning to occur within the upper reach of Schrieber Creek near channel cross section SC2A-1, where willow coverage within the channel is less than 5 percent.

Hydrology – During the 2024 investigation, the average surface water depth across the entire site was estimated at 1.5 feet, with a range of depths from 0.1 to 5 feet. The surface-water depth at the emergent vegetation and open-water boundary was estimated at 2.0 feet. The deepest standing water is located within the excavated cells, creek channels and Schrieber Lake, and the average water depths across the site decreased slightly from 2023, 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.

Approximately 85 percent of the wetlands were inundated during the 2024 site visit. Open water areas with less than 5 percent emergent vegetation in 2024 are mapped in Figures A-3 through A-5 in Appendix A.

In 2024, the beaver dam initially documented in 2019 at the outlet of Schrieber Lake was still present and impounding water. However, in 2023 and 2024, there were no signs of fresh beaver activity such as chewed sticks, freshly placed mud, or beaver tracks, leading the investigators to believe the beaver dam is no longer being maintained by an active beaver colony. The beaver dam is scheduled for removal prior to the 2025 monitoring event, and it is anticipated less open water and shifts in plant communities may result from this action.

Soils – Soil test pits were excavated at 19 locations to evaluate the extent of hydric soil development across the site in 2024 (Figure A-5, Appendix A). Soil textures within upland test pits ranged from sandy loam to silt loam. No hydric soil indicators were observed in the upland test pits. Wetland test pits were characterized by soil textures ranging from sand to peat and had hydric soil indicators that included loamy mucky mineral soils, hydrogen sulfide odors, thick dark surfaces, depletion below dark surfaces, histic epipedons, and histosols. Three wetland data points, DP04w, DP05w, and DP09w, had problematic soils with no observed hydric soil indicators but were determined to be within wetlands based on hydrology and vegetation. Additional field observations for the 19 data points are provided in the USACE wetland determination data forms in Appendix B.

Functional Assessment – The 2008 Montana Wetland Assessment Method (MWAM) was used to evaluate the site in 2024 (Appendix B). The Assessment Area (AA) includes all delineated wetlands, including the creditable wetlands (36.33 acres), wetlands within the riparian buffers of Schrieber and Coyote Creeks (3.90 acres), Schrieber Lake and remaining open water areas (12.55 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 (1.71 acres). The wetlands in the AA received a Category I rating and received 93 percent of the total possible functional points in 2024. 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, MTNHP Species Habitat, and Flood Attenuation, which were rated as moderate (Table 6).

Table 6. Montana Wetland Assessment Method Summary for Schrieber Lake

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2015 Entire Site	2024 Entire Site
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	High (0.8)	Mod (0.8)
Montana Natural Heritage Program (MTNHP) S1, S2, and S3 Species Habitat	Mod (0.6)	High (0.9)
General Wildlife Habitat	Exc (1.0)	Exc (1.0)
General Fish/Aquatic Habitat	Mod (0.7)	Mod (0.7)
Flood Attenuation	Mod (0.6)	Mod (0.6)
Short- and Long-Term, Surface-Water Storage	High (1.0)	High (1.0)
Sediment/Nutrient/Toxicant Removal	High (1.0)	High (1.0)
Sediment/Shoreline Stabilization	High (1.0)	High (1.0)
Production Export/Food Chain Support	High (1.0)	High (1.0)
Groundwater Discharge/Recharge	High (1.0)	High (1.0)
Uniqueness	High (0.9)	High (1.0)
Recreation/Education Potential (bonus points)	Mod (0.1)	High (0.2)
Actual Points/Possible Points	**9.7/11**	**10.2/11**
% of Possible Score Achieved	**88.2%**	**93%**
Overall Category	**I**	**I**

Wildlife – The site supports a diversity of wildlife. Twenty-three bird species were identified in 2024 at the Schrieber Lake site. In addition to the bird species, northern Columbia spotted frogs, white-tailed deer, Richardson's ground squirrels, voles, an unidentified turtle species, and one female moose were observed (Appendix B).

Photographs – Ten photo points were established in the project area in 2015. Photographs were taken at all ten photo point locations during the 2024 site visit. In addition to established photo points, photographs were taken at each surveyed stream cross-section, sampled data points, and vegetation transect endpoints. The photo point locations are illustrated in Figure A-2 (Appendix A), and 2015 and 2024 photographs are compared in Appendix C. Site photographs associated with previous years' 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 2024 data were evaluated against the previous surveys to assess stream channel stability. In 2024, the banks of the constructed channels exhibited stable conditions and were generally well-vegetated with deep-rooted plant species. The stream monitoring survey indicates that little to no significant channel morphological changes occurred between 2023 and 2024. The stream beds at two of the cross sections, SC7-1 and CC1B-1, were a foot lower than in 2023, but within the range of normal fluctuations seen in previous years. All cross sections exhibited surface water elevations about 0.5 feet lower than what was surveyed in 2023.

The 2024 PFC assessment rated all stream reaches at the site as Functioning, including Schrieber Creek Reach 1 (SC1), which was rated as in proper functioning condition considering the ephemeral nature of the reach. The 2024 PFC assessment forms can be found in Appendix D. Upper Schrieber Creek appears stable and in dynamic equilibrium with the surrounding landscape. The vegetation that has established within the channel is capable of maintaining channel form and function under the current hydrologic regime. In 2024, some willows were observed establishing within the stream channel, although their cover totaled less than 5 percent.

Credit Summary – Stream Credits

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

Data collected during the 2024 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 along the majority of the bank area. The ephemeral nature of this reach results in slower vegetation growth. As a result, Reach 1 of Schrieber Creek has not met all success criteria and is, therefore, generating half of the anticipated credits. Reaches 2A, 2B, 3, and 7 of Schrieber Creek and Reaches 1A and 1B of Coyote Creek meet all success criteria and have generated the predicted credits outlined in the monitoring plan. Future monitoring will continue to assess the vegetation establishment within Reach 1 of Schrieber Creek and its status in meeting the success criteria and generating the anticipated stream mitigation credits. The entire Schrieber Lake site has generated approximately 34,349.67 stream credits, which is 2,392.20 credits less than the original projection.

Table 7. 2024 Riparian and Stream Mitigation Credits for the Schrieber Lake Site

Channel Segment	Reach	Side	Predicted Credits	2024 Credits
Coyote Creek	1A	A	4,141.63	4,141.63
		B	4,141.63	4,141.63
	1B	A	1,586.25	1,586.25
		B	1,692.00	1,692.00
Schrieber Creek	1	A	2,392.20	1,196.1
		B	2,392.20	1,196.1
	2A	A	2,722.50	2,722.50
		B	2,722.50	2,722.50
	2B	A	576.65	576.65
		B	576.65	576.65
	3	A	3,964.83	3,964.83
		B	3,964.83	3,964.83
	7	A	2,934.00	2,934.00
		B	2,934.00	2,934.00
Total			**36,741.87**	**34,349.67**

Credit Summary – Wetland Credits

MDT anticipates generating 13.4 wetland credit acres from the Schrieber Lake project. Proposed mitigation credits from the 2014 Schrieber Lake Mitigation Plan included establishing 3.06 wetland acres, re-establishing 2.53 wetland acres, enhancing 4.53 acres of the fen-carr shrubland, preserving 25.6 acres of existing fen/carr and sedge-dominated areas, and creating a 50-foot upland buffer (3.81 acres) around newly established wetlands in the center of the site. Table 8 summarizes the estimated 2024 wetland credits based on the pending USACE-approved credit ratios and the wetland delineation completed in July 2024. The 2024 wetland delineation identified 36.33 acres of creditable wetlands and 4.51 acres of non-creditable open water within the mitigation site, not including Schrieber Lake.

Creditable wetland acreage included 5.11 acres of created wetlands, 1.14 acres of restored wetlands, 4.77 acres of enhanced wetlands, and 25.09 acres of preserved wetlands, with 3.16 acres of upland buffer around the perimeter of the delineated wetlands. Following the USACE-approved performance standard for this site, open water areas with more than 5 percent cover of submerged and/or floating vegetation will be considered successful and creditable. The open water areas at the site are not considered creditable as they did not meet these criteria. Open water acreage included 2.44 acres of created open water, 1.27 acres of restored open water, and 0.80 acres of preserved open water. Schrieber Lake has never received mitigation credit at this site and is therefore excluded from Table 8. This site's 2024 estimated credit acres have exceeded the proposed credit acres. To date, 14.34 credit acres have been developed at this site. Figure A-4 (Appendix A) shows the location of wetlands based on credit type.

Table 8. Summary of Wetland Mitigation Credits at the Schrieber Lake Site in 2015 and 2023 through 2024

Mitigation Type	Total Proposed Acreage	Ratio	Proposed Credit Acres	2015 Delineated Acreage	2015 Credit Acres	2023 Delineated Acres	2023 Credit Acres	2024 Delineated Acres	2024 Credit Acres
Establishment (Creation)	3.06	1:1	3.06	4.80	4.80	5.72	5.72	5.11	5.11
Establishment (Creation) 'Open Water'[(b)]	--	TBD	--	--	--	2.24	TBD	2.44	TBD
Restoration (Re-establishment)	2.53	1.5:1	1.69	2.42	1.62	1.27	0.85	1.14	0.76
Restoration 'Open Water' [(b)]	--	TBD	--	--	--	1.15	TBD	1.27	TBD
Enhancement areas- Carr Shrubland expansion	4.53	3:1	1.51	4.77	1.59	4.77	1.59	4.77	1.59
Enhancement 'Open Water' [(b)]	--	TBD	--	--	--	--	--	--	--
Preservation-Existing Fen-Carr-Carex Areas	25.60	4:1	6.40	25.66	6.42	24.79	6.20	25.09	6.27
Preservation 'Open Water' [(b)]	--	TBD	--	--	--	1.23	TBD	0.80	TBD
Upland Buffer (50 feet)[(a)]	3.81	5:1	0.76	8.42	1.68	3.01	0.60	3.16	0.63
Permanent Project Impacts	0.02	None	-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**	**44.16**	**14.94**	**43.76**	**14.34**

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

(b) Creditable open water acreage is separated into Creation, Restoration, and Preservation open water. Mitigation 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 2024 functional unit credits are summarized in Table 9. A total of 140.07 functional unit credits were generated at the Schrieber Lake site after applying the appropriate mitigation ratios to the 2024 wetland acreage and multiplying that value by the functional points generated from the 2024 MWAM assessment.

Table 9. Functional Unit Credits Summary for Schrieber Lake

Mitigation Type	2024 Delineated Acreage	Ratio	2024 Mitigation Credit Acres	MWAM Actual Points[a]	Functional Unit Credits
Establishment (Creation)	5.11	1:1	5.11	10.20	52.12
Establishment (Creation) Open Water	2.44	TBD	TBD	10.20	TBD
Restoration (Re-establishment)	1.14	1.5:1	0.76	10.20	7.75
Restoration Open Water	1.27	TBD	TBD	10.20	TBD
Enhancement – Carr Fen Expansion	4.77	3:1	1.59	10.20	16.22
Preservation – Existing Carr Fen and Carex Areas	25.09	4:1	6.27	10.20	63.98
Preservation Open Water	0.80	TBD	TBD	10.20	TBD
Functional Unit Credits (Mitigation Credit Acres × Actual Points)					**140.07**

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

Conclusions

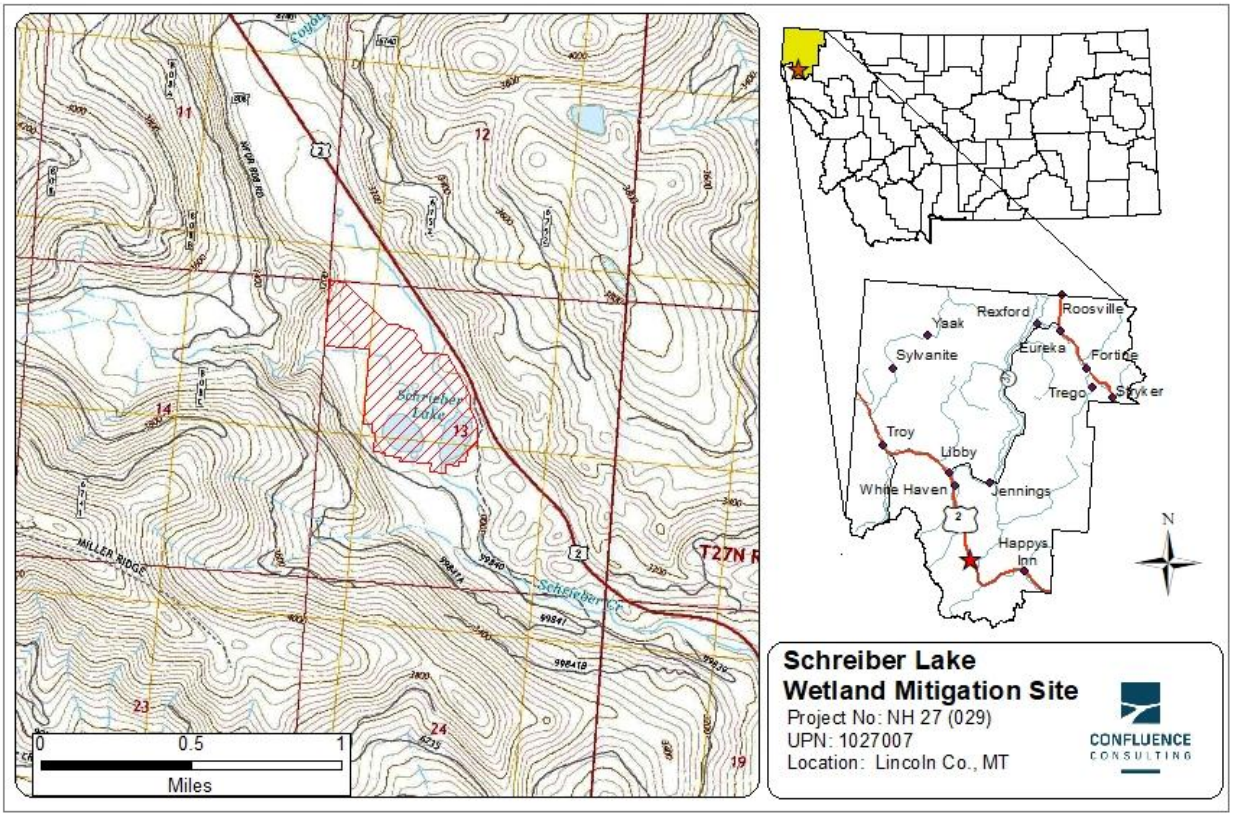
Based on the results of the tenth year of monitoring, the mitigation site is continuing to develop into a diverse wetland ecosystem. The site is meeting all performance standards except the following:

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

Woody plant survival is not expected to meet the established performance standard in 2025. Removal of the beaver dam at the outlet of Schrieber Lake in 2024 is expected to allow shrubs to reestablish within the site with natural recruitment and regrowth in future years. Reach SC-1 along Schrieber Creek is an ephemeral reach that is taking longer for deep-rooted vegetation to establish but is expected to meet this success criterion in the future as it is in an upward trajectory based upon annual monitoring. No remedial actions are recommended at this time.

Maps, Plans, Photos

Figure 1. Site Location Map



Project Area Maps/Figures: See Appendix A (Figure A-2 – 2024 Monitoring Activity Locations; Figure A-3 – 2024 Mapped Site Features; Figure A-4 – 2024 Wetland Credit Areas; Figure A-5 – 2024 Wetland Delineation)

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

Plant List: See Appendix B

Photos: See Appendix C

PFC Assessments, Stream Cross-Sections: See Appendix D

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

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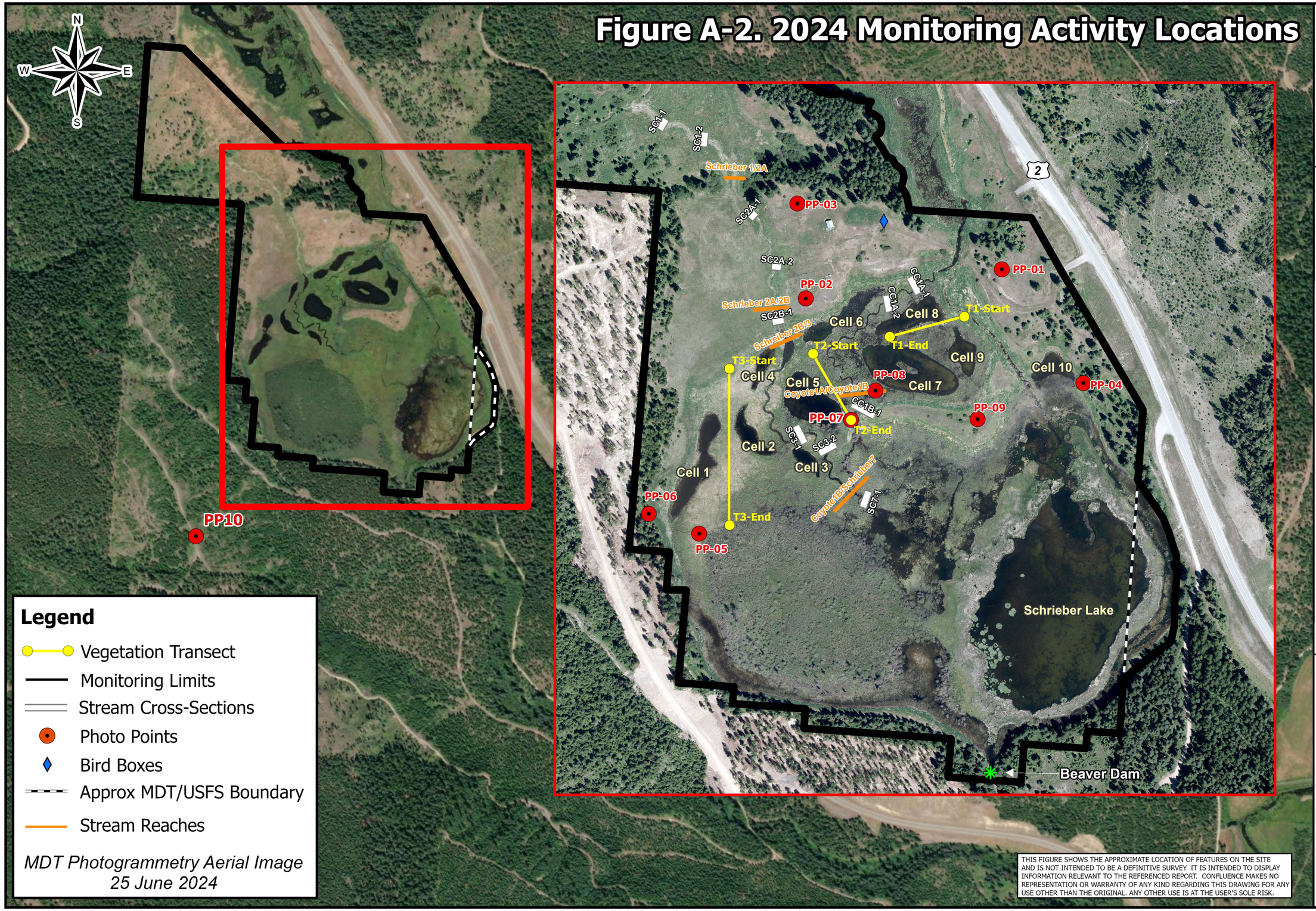
APPENDIX A
PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

Figure A-2. 2024 Monitoring Activity Locations



Legend

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

MDT Photogrammetry Aerial Image
25 June 2024

CONFLUENCE CONSULTING

Schrieber Lake Mitigation Site
2024 Monitoring Activity Locations

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

Project:	NH 27 (029)
Location:	Lincoln Co., Montana
Date Map Created:	Nov. 2024
Project Manager:	R. McEldowney
Drawn By:	B Pease

File: X:\Project\MDT Wetland Mitigation 2\ArcGIS Pro\Schrieber Lake\Schrieber Lake.aprx

Figure A-3. 2024 Mapped Site Features

N
W E
S

Vegetation Community Types

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

Noxious Weeds

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

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

Legend

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

MDT Photogrammetry Aerial Image 25 June 2024

Beaver Dam

2

CONFLUENCE CONSULTING

Schrieber Lake Mitigation Site
2024 Mapped Site Features

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

Project:	NH 27 (029)
Location:	Lincoln Co., Montana
Date Map Created:	Nov. 2024
Project Manager:	R. McEldowney
Drawn By:	B Pease

Figure A-4. 2024 Wetland Credit Areas

N
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2

MDT / USFS Boundary

Schrieber Lake

Credit Types

- Creation - 5.11 acres
- Enhancement - 4.77 acres
- Preservation - 25.09 acres
- Restoration - 1.14 acres
- Upland Buffer - 3.16 acres
- Stream Buffer (stream credit) - 10.13 acres
- Open Water - 12.52 acres
- USFS (no credit) - 1.71 acres

MDT Photogrammetry Aerial Image
25 June 2024

CONFLUENCE CONSULTING

Schrieber Lake Mitigation Site
2024 Wetland Credit Areas

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

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: Nov. 2024
Project Manager: R. McEldowney
Drawn By: B Pease

File: X:\Project\MDT Wetland Mitigation 2\ArcGIS Pro\Schrieber Lake\Schrieber Lake.aprx

Figure A-5. 2024 Wetland Delineation

N
W E
S

Wetland and Aquatic Habitat Acreage

Project Area	104.70 acres
Pre-Project Wetland	42.84 acres
2024 Wetlands	
USFS Wetlands	1.71 acres
MDT Wetlands	36.33 acres
Riparian Buffer (no wetland credit)*	3.90 acres
Total 2024 Wetlands	41.94 acres
2024 Open Water & Streams	
Schrieber Lake**	7.72 acres
Open Water (Cells 1-10)**	4.51 acres
Schrieber & Coyote Creek (no wetland credit)	1.0 acre

* Riparian Buffer within delineated wetland boundary (part of stream credit area, no wetland credit received)
**Open water includes Cells 1-10, Schrieber Lake, and part of preservation area northwest of Schrieber Lake, does not include stream channels

Legend

- Data Point
- Monitoring Limits
- Pre-Project Wetland Area
- 2024 Wetland Area
- Open Water
- Stream Channel
- Approx. MDT/USFS Boundary

MDT Photogrammetry Aerial Image 25 June 2024

DP01-u
DP01-w
DP07-w
DP07-u
DP02-u
DP02-w
DP08-u
DP09-w
DP08-w
DP09-u
DP06-u
DP06-w
DP03-u
DP03-w
DP10w
DP04-w
DP04-u
DP05-w
DP05-u
2

CONFLUENCE CONSULTING

Schrieber Lake Mitigation Site
2024 Wetland Delineation

0 200 400 800 1,200 1,600 Feet

Project:	NH 27 (029)
Location:	Lincoln Co., Montana
Date Map Created:	Nov. 2024
Project Manager:	R. McEldowney
Drawn By:	B Pease

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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 7/17/2024

Person(s) conducting the assessment: R. McEldowney, E. Reynaud, R. Baumgarten

Weather: 85 degrees, cloudy, clear Location: U.S. Highway 2

MDT District: Missoula Milepost: 53.8

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

Initial Evaluation Date: 5/18/2015 Monitoring Year: 10 #Visits in Year: 1

Size of Evaluation Area: 105 (acres)

Land use surrounding wetland:

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

HYDROLOGY

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

Inundation: ☑ Average Depth: 1.5 **(ft)** Range of Depths: 0.1-5 **(ft)**

Percent of assessment area under inundation: 85 %

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

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

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

Surface water, saturation, high water table, hydrogen sulfide odor, geomorphic position, iron deposits, sparsely vegetated concave surfaces, stunted or stressed plants, FAC neutral test, and inundation visible on aerial imagery.

Groundwater Monitoring Wells

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

Well ID	Water Surface Depth (ft)
N/A	

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. 85% 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 2024 has significantly impacted water depths across the site. Depths ranged from 0.1 to 5.0 feet with the 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:** 11.7

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

Comments:

An upland island of this community type in the middle of the site expanded slightly, by 0.19 acres, in 2024.

Community # 3 **Community Type:** Phalaris arundinacea / Carex spp. **Acres:** 6.26

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

Comments:

No changes were observed in this community type in 2024. Acreage decreased slightly with updated mapping of stream channels.

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

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

Comments:

Upland forested community at edges of wetland boundaries. No changes were observed in 2024.

Community # 8 **Community Type:** Carex spp. / **Acres:** 16.66

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

Comments:

In 2024, this community was inundated with an average of 1.5 feet of ponded water. The acreage decreased in 2024 with the expansion of an upland island of CT 1 and updated mapping of stream channels and open water boundaries.

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:** 8.13

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

Comments:

Wetland community type that surrounds Schrieber Lake and open water areas. Acreage increased in 2024 with updated mapping of stream channels and changes to open water boundaries.

Community # 11 **Community Type:** Open Water / Aquatic macrophytes **Acres:** 12.52

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 is 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:** 11.55

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

Comments:

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

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

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

Comments:

Upland CT created in 2022 which replaced a portion of CT1 - Elymus/Bromus because of the increase in dominance of Alopecurus pratensis. The area appears to be slightly wetter than the adjacent CT1, which is slightly higher in elevation. No changes to this community type were observed in 2024.

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

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

Comments:

Many of the shrubs in this CT have struggled to thrive due to perennial inundation caused by the beaver dam at the outlet of Schrieber Lake.

Community # 99 **Community Type:** Stream Channel / **Acres:** 1.31

Species	Cover class	Species	Cover class

Comments:

Mapped stream channel within the Schrieber Lake project area.

Total Vegetation Community Acreage **104.7**

VEGETATION TRANSECTS

Site: Schrieber Lake Date: 7/17/2024

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

Interval Data:

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

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

Ending Station 284 Community Type: Typha latifolia / Open Water

Species	Cover class	Species	Cover class
Aquatic macrophytes	4	Carex aquatilis	0
Carex vesicaria	1	Lemna minor	1
Open Water	2	Persicaria amphibia	5
Phalaris arundinacea	3	Typha latifolia	3

Transect Notes:

The first 30' of Transect 1 was saturated but did not contain surface water. From 30-284' water depth averaged around 8" and cattail cover decreased, while water smartweed increased in cover. Boats were used to access transect.

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

Interval Data:

Ending Station 280 Community Type: Carex spp. /

Species	Cover class	Species	Cover class
Carex utriculata	5	Carex vesicaria	3
Eleocharis palustris	0	Lemna minor	2
Open Water	3	Persicaria amphibia	4
Phalaris arundinacea	1		

Transect Notes:

In 2024 this transect spanned one vegetation community because of the expansion of sedges and a reduction in reed canarygrass in the perennially inundated portions of the project area. Cover by northwest territory sedge increased significantly in 2024.

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

Interval Data:

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

Species	Cover class	Species	Cover class
Bare Ground	2	Carex bebbii	0
Carex utriculata	3	Carex vesicaria	3
Persicaria amphibia	1	Phalaris arundinacea	5
Typha latifolia	0		

Ending Station 584 Community Type: Carex spp. /

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

Transect Notes:

The northern portion of this transect did not contain surface water, while the southern portion had up to 6" of surface water.

PLANTED WOODY VEGETATION SURVIVAL

Schrieber Lake

Planting Type	#Planted	#Alive	Notes
Various Species	1500		

Comments

MDT planted 1,500 woody plants in the riparian buffer along Schrieber Creek, Coyote Creek, and around some wetland excavations. In 2020-2024, based on observations at the 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 canarygrass is problematic, as are the deep perennial inundation conditions present in most of the wetland habitat across the site. Woody plantings along the upper Schrieber Creek corridor were adversely affected by previous weed spraying activities.

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:

There are no longer bird boxes attached to posts at either bird box location, however, there were signs of nesting within a cavity in one of the bird box posts.

Species	#Observed	Behavior	Habitat
American Robin	2		
Black-capped Chickadee	1		
Canada Goose	17		
Cassin's Vireo	1		
Cedar Waxwing	2		
Chestnut-backed Chickadee	1		
Common Yellowthroat	2		
Dark-eyed Junco	1		
Golden-crowned Kinglet	1		
Hairy Woodpecker	1		
Hummingbird	1		
Mallard	5		
Northern Flicker	1		
Phalarope	1		
Pine Siskin	1		
Red-breasted Merganser	2		
Red-winged Blackbird	14		
Song Sparrow	2		
Sora	1		
Warbling Vireo	1		
Western Tanager	1		
Wilson's Snipe	1		

Bird Comments

An abundance of bird species was observed at this site.

BEHAVIOR CODES

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

HABITAT CODES

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

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

Mammals and Herptiles

Species	# Observed	Tracks	Scat	Burrows	Comments
Columbia Spotted Frog	3	No	No	No	
Moose	1	No	Yes	No	
Richardson's Ground Squirrel	1	No	No	No	
Turtle spp.	3	No	No	No	
Vole	2	No	No	No	
White-tailed Deer	5	Yes	Yes	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 north bank
CC1A-1	48.106803	-115.410891	50	CC1A-1 upstream
CC1A-2	48.1066	-115.41127	355	CC1A-2 north bank
CC1A-2	48.1066	-115.41127	85	CC1A-2 upstream
CC1B-1	48.105509	-115.411518	110	CC1B-1 east bank
CC1B-1	48.105509	-115.411518	200	CC1B-1 downstream
DP01-u	48.106878	-115.411242		Data point
DP01-w	48.106836	-115.411233		Data point
DP02-u	48.105782	-115.413755		Data point
DP02-w	48.105695	-115.413715		Data point
DP03-u	48.104127	-115.414452		Data point
DP03-w	48.104155	-115.414286		Data point
DP04-u	48.102505	-115.412703		Data point
DP04-w	48.102554	-115.412725		Data point
DP05-u	48.102427	-115.408638		Data point
DP05-w	48.102488	-115.408617		Data point
DP06-u	48.104847	-115.407074		Data point
DP06-w	48.104824	-115.40712		Data point
DP07-u	48.106446	-115.40948		Data point
DP07-w	48.106405	-115.409559		Data point
DP08-u	48.105829	-115.409362		Data point
DP08-w	48.105797	-115.409301		Data point

DP09-u	48.105561	-115.409855		Data point
DP09-w	48.105605	-115.409864		Data point
DP10w	48.103981	-115.4136463		Data point
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 north 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 north bank
SC2A-1	48.107386	-115.413401	45	SC2A-1 northeast bank
SC2A-1	48.107386	-115.413401	315	SC2A-1 downstream
SC2A-2	48.106889	-115.41299	275	SC2A-2 west bank
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 west bank
SC3-1	48.105212	-115.412439	240	SC3-1 upstream
SC3-1	48.105212	-115.412439	330	SC3-1 north bank
SC3-2	48.10509	-115.412014	160	SC3-2 downstream
SC3-2	48.10509	-115.412014	70	SC3-2 east bank

SC7-1	48.104608	-115.41138	110	SC7-1 downstream
SC7-1	48.104608	-115.41138	20	SC7-1 north 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 2024 was 55.66 acres, an increase of 0.01 acres since 2023. Schrieber Lake occupied 8.05 acres on MDT property and remaining open water areas represented a total of 4.51 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.

There are no longer bird boxes attached to posts at either bird box location, however, there were signs of nesting within a cavity in one of the bird box posts.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP01u

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.106878 Long: -115.411242 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Upland data point at north end of project area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Bromus inermis	40	✔	UPL
2. Pascopyrum smithii	20	✔	FACU
3. Phalaris arundinacea	20	✔	FACW
4. Alopecurus pratensis	10		FAC
5. Cirsium arvense	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	15	x 3 =	45
FACU species	20	x 4 =	80
UPL species	40	x 5 =	200
Column Totals:	95 (A)		365 (B)

Prevalence Index = B/A = 3.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Phalaris arundinacea is present but does not appear to be thriving. Site did not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: DP01u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Loamy Sand	Lots of roots.
5 - 15	10YR 2/1	100					Loam	Rocks.
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. Of Transportation State: Montana Sampling Point: DP01w

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

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

Subregion (LRR): E 43A Lat: 48.106878 Long: -115.411242 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

PEM, riverine sample point at north end of site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	75	✔	FACW
2. Carex pellita	10		OBL
3. Carex utriculata	5		OBL
4. Persicaria amphibia	1		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 9

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	16	x 1 =	16
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	91 (A)		166 (B)

Prevalence Index = B/A = 1.82

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP01w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Mucky Loam/Clay	Sulfidic odor at 8 inches.
-								
-								
-								
-								
-								
-								
-								

[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:

Mucky mineral soil with 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 Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Data point had saturation to the soil surface and a sulfidic odor.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP02u

Investigator(s): E Reynaud Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.105782 Long: -115.413755 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 30 ft upgradient of wetland point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Bromus inermis	70	✔	UPL
2. Alopecurus arundinaceus	20	✔	FAC
3. Elymus repens	10		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	70	x 5 =	350
Column Totals:	100 (A)		440 (B)

Prevalence Index = B/A = 4.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Data point did not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: DP02u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Silt Loam	
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP02w

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.105695 Long: -115.413715 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Wetland data point in NW area of site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	80	✔	FACW
2. Carex pellita	10		OBL
3. Persicaria amphibia	1		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 9

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	11	x 1 =	11
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	91 (A)		171 (B)

Prevalence Index = B/A = 1.87

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP02w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 17	10YR 2/1	100					Loam	Organic matter.
17 - 20	10YR 5/1	98	10YR 5/6	2	C	PL	Silt Loam	Depleted matrix likely continues below 20 inches.
-								
-								
-								
-								
-								
-								

[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:

Depleted matrix observed below thick dark 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 Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Soil is moist but not quite saturated. This area was likely saturated earlier in the growing season. Secondary indicators provide evidence of wetland hydrology.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP03u

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.104127 Long: -115.414452 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 data point on edge of forest with FAC vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus contorta	15	✔	FAC
2. Picea glauca	10	✔	FAC
3. Amelanchier alnifolia	5		FACU
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Arctostaphylos uva-ursi	10	✔	FACU
2. Symphoricarpos albus	10	✔	FACU
3. Amelanchier alnifolia	5		FACU
4. Crataegus douglasii	1		FAC
5. Picea glauca	1		FAC
	27	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Elymus repens	50	✔	FAC
2. Phleum pratense	20	✔	FAC
3. Dactylis glomerata	10		FACU
4. Agrostis capillaris	2		FAC
5. Equisetum arvense	1		FAC
6. Maianthemum stellatum	1		FAC
7. Phalaris arundinacea	1		FACW
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	101	x 3 =	303
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	142 (A)		465 (B)

Prevalence Index = B/A = 3.27

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Dominance test passed with FACU species and FAC species that are ubiquitous in upland areas in the site and so are poor wetland indicators. Upland status was determined based on soil and hydrology.

SOIL

Sampling Point: DP03u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 15	10YR 4/1	100					Loamy Sand	Gravelly
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Gravel throughout profile. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP03w

Investigator(s): E Reynaud Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Lake Plain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): E 43A Lat: 48.104155 Long: -115.414286 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Data point taken near western border of site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	40	✔	FACW
2. Carex lasiocarpa	30	✔	OBL
3. Carex spp.	10		FAC
4. Eleocharis palustris	10		OBL
5. Persicaria amphibia	10		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	40	x 2 =	80
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP03w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/2	100					Peat	
12 - 18	10YR 6/1	100					Loamy Sand	
-								
-								
-								
-								
-								
-								

[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 presence of a histic epipedon and sulfidic odor in the profile 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 Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Evidence of wetland hydrology includes a high water table, soil saturation, sulfidic odor, 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 County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP04u

Investigator(s): E Reynaud Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.102505 Long: -115.412703 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 data point taken in wooded area near southern border of site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea glauca	30	✔	FAC
2. Picea engelmannii	15	✔	FAC
3. Pseudotsuga menziesii	10		FACU
4. Larix occidentalis	3		FACU
	58	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Linnaea borealis	30	✔	FACU
2. Cornus canadensis	10		FAC
3. Equisetum arvense	5		FAC
4. Maianthemum stellatum	5		FAC
5. Rosa woodsii	5		FACU
6. Arnica cordifolia	2		UPL
7.			
8.			
9.			
10.			
11.			
	57	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 43

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	48	x 4 =	192
UPL species	2	x 5 =	10
Column Totals:	115 (A)		397 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Dominance test passed with FACU species and FAC species that are ubiquitous in upland areas in the site and so are poor wetland indicators. Upland status was determined based on soil and hydrology.

SOIL

Sampling Point: DP04u

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed. Roots and rocks at 8 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. Of Transportation State: Montana Sampling Point: DP04w

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

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

Subregion (LRR): E 43A Lat: 48.102554 Long: -115.412725 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

PEM, adjacent to open water in the southwest portion of the site. No hydric soil indicators observed. Wetland determination based on presence of hydrophytic vegetation and wetland hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	40	✔	FACW
2. Deschampsia caespitosa	20	✔	FACW
3. Juncus ensifolius	5		FACW
4. Leucanthum vulgare	2		UPL
5. Unidentified forb	2		
6. Carex bebbii	1		OBL
7. Carex pellita	1		OBL
8. Plantago major	1		FAC
9.			
10.			
11.			
	72 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 28

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	65	x 2 =	130
FAC species	1	x 3 =	3
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	70 (A)		145 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP04w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/1	100					Sandy Loam	Gravelly
2 - 15	10YR 5/2	100					Sand	Gravelly coarse sand
-								
-								
-								
-								
-								
-								

[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:

Problematic soil. No hydric soil indicators found. Determination based on dominance of hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Saturated to the surface. Surface water located 10 ft to north.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP05u

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.102427 Long: -115.408638 Datum: NAD 83

Soil Map Unit Name: W - Water 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 data point on low terrace adjacent to Schrieber Lake.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	40	✔	FACU
2.			
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Amelanchier alnifolia	10	✔	FACU
2. Shepherdia canadensis	5	✔	UPL
3. Lonicera utahensis	1		FAC
4.			
5.			
	16	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	50	✔	FAC
2. Alopecurus pratensis	25	✔	FAC
3. Centaurea stoebe	5		UPL
4. Arnica cordifolia	2		FAC
5. Campanula rotundifolia	1		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	83	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 17

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	78	x 3 =	234
FACU species	51	x 4 =	204
UPL species	10	x 5 =	50
Column Totals:	139 (A)		488 (B)

Prevalence Index = B/A = 3.51

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

No indicators met for hydrophytic vegetation.

SOIL

Sampling Point: DP05u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/2	100					Loamy Sand	Lots of rocks and gravel.
-								
-								
-								
-								
-								
-								
-								

[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. Rocks at 9 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. Of Transportation State: Montana Sampling Point: DP05w

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

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

Subregion (LRR): E 43A Lat: 48.102488 Long: -115.408617 Datum: NAD 83

Soil Map Unit Name: W - Water NWI classification: PEM1B

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Wetland data point in the wetland fringe around Schrieber Lake in the SE portion of the site. Determination based on the presence of hydrophytic vegetation and wetland hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	35	✔	FACW
2. Typha latifolia	25	✔	OBL
3. Cirsium arvense	10		FAC
4. Mentha arvensis	1		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	71 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 29

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	36	x 2 =	72
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	71 (A)		127 (B)

Prevalence Index = B/A = 1.78

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP05w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Peat	
2 - 15	10YR 3/2	100					Sandy Loam	Gravelly
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

No approved hydric soil indicators observed, does meet indicator A10 (2 cm Muck). The site has seasonally ponded soils. Determination is based on the dominance of hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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:

Surface water located 6 ft north of data point and has two secondary indicators.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP06u

Investigator(s): E Reynaud Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.104847 Long: -115.407074 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:

Data point taken near eastern border across MDT/USFS boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa	45	✔	FACU
2. Pseudotsuga menziesii	15	✔	FACU
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Amelanchier alnifolia	30	✔	FACU
2. Symphoricarpos albus	25	✔	FACU
3. Prunus virginiana	10		FACU
4. Rosa woodsii	5		FACU
5.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Elymus repens	50	✔	FAC
2. Equisetum arvense	1		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	51	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 49

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	51	x 3 =	153
FACU species	130	x 4 =	520
UPL species	0	x 5 =	0
Column Totals:	181 (A)		673 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Site dominated by FACU and FAC species and did not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: DP06u

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed. Rock layer at 10 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP06w

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.104824 Long: -115.40712 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 data point on edge of forest near road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	90	✔	FACW
2. Verbascum thapsus	1		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 9

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	91 (A)		184 (B)

Prevalence Index = B/A = 2.02

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP06w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Mucky Peat	Muck, oily with lots of roots.
3 - 8	10YR 2/2	100					Clay Loam	Sulfidic odor.
8 - 16	10YR 2/1	100					Loamy Sand	Very wet and gravelly.
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Sulfidic odor coming from second soil layer.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✔ No ___ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 3

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Surface water with iron deposit film just outside 5ft radius. Multiple primary and secondary hydrologic indicators met.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. Of Transportation State: Montana Sampling Point: DP07u

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

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

Subregion (LRR): E 43A Lat: 48.106446 Long: -115.40948 Datum: NAD 83

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: R5UBH

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Data point located on an old two track on a hillslope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus contorta	35	✔	FAC
2.			
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Phleum pratense	25	✔	FAC
2. Agrostis capillaris	5		FAC
3. Pseudoroegneria spicata	2		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	32	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 68

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	67 (A)		205 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Dominance test passed with FAC species that are ubiquitous in upland areas in the site and so are poor wetland indicators. Upland status was determined based on soil and hydrology.

SOIL

Sampling Point: DP07u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 3/2	100					Sandy Loam	Gravelly
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. Of Transportation State: Montana Sampling Point: DP07w

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

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

Subregion (LRR): E 43A Lat: 48.106405 Long: -115.409559 Datum: NAD 83

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: R5UBH

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

PEM, riverine. Wetland data point in northeast portion of site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	50	✔	FACW
2. Alopecurus arundinaceus	15		FAC
3. Carex stipata	15		OBL
4. Cirsium arvense	2		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	82 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 18

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	50	x 2 =	100
FAC species	17	x 3 =	51
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	82 (A)		166 (B)

Prevalence Index = B/A = 2.02

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP07w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 19	10YR 2/1	100					Sandy Loam	Gravelly
19 - 21	10YR 5/1	100					Loam	
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

The soil has a thick dark surface hydric soil indicator.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Saturated at 6 inches with two secondary indicators.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP08u

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): Linear Slope (%): 0

Subregion (LRR): E 43A Lat: 48.105829 Long: -115.409362 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 data point on an upland island.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa compressa	50	✔	FACU
2. Linaria dalmatica	10		UPL
3. Centaurea stoebe	5		UPL
4. Achillea millefolium	3		FACU
5. Cirsium arvense	1		FAC
6. Persicaria amphibia	1		OBL
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	53	x 4 =	212
UPL species	15	x 5 =	75
Column Totals:	70 (A)		291 (B)

Prevalence Index = B/A = 4.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Vegetation is very dry. Site did not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: DP08u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Sandy Loam	
4 - 12	10R 3/1	100					Loamy Sand	Gravelly.
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Soil profile was very dry with rocks at 12 inches. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP08w

Investigator(s): E Reynaud Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.105797 Long: -115.409301 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Data point taken in wetland adjacent to an upland island.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix lasiandra	2		FACW
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	80	✔	FACW
2. Cirsium arvense	10		FAC
3. Persicaria amphibia	10		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	82	x 2 =	164
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	102 (A)		204 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP08w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1	100					Loam	
18 - 24	10YR 5/1	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

The presence of a depleted matrix below a dark surface 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 Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Evidence of wetland hydrology includes soil saturation, 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 County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP09u

Investigator(s): E Reynaud Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.105561 Long: -115.409855 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:

Data point taken on an upland island.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Centaurea stoebe	55	✔	FACU
2. Poa compressa	15		FACU
3. Cirsium arvense	5		FAC
4. Persicaria amphibia	3		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	78 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 22

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	78 (A)		298 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Site is dominated by FACU species and did not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: DP09u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/2	100					Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed. Rocks at 9 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-17

Applicant/Owner: Montana Dept. of Transportation State: Montana Sampling Point: DP09w

Investigator(s): R Baumgarten Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): E 43A Lat: 48.105605 Long: -115.409864 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 data point near upland island. Problematic soil but vegetation and hydrology have strong indicators that justify the wetland determination.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	60	✔	FACW
2. Cirsium arvense	5		FAC
3. Persicaria amphibia	5		OBL
4. Achillea millefolium	1		FACU
5. Alopecurus pratensis	1		FAC
6. Bromus inermis	1		UPL
7. Carex tenera	1		FACW
8. Verbascum thapsus	1		FACU
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	61	x 2 =	122
FAC species	6	x 3 =	18
FACU species	2	x 4 =	8
UPL species	1	x 5 =	5
Column Totals:	75 (A)		158 (B)

Prevalence Index = B/A = 2.10

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test and a positive dominance test.

SOIL

Sampling Point: DP09w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Sandy Loam	
4 - 12	10YR 2/1	60	N 2.5/0	20	D	M	Silty Clay Loam	Complex layer.
-	10YR 3/3	20					Silty Clay Loam	Complex layer.
12 - 14	10YR 2/1	100					Loam	Gravelly.
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Problematic soil due to complex layers, possibly as a result of disturbance during excavation of the wetland cell - not representative of sample point. Multiple indicators observed for both hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

Data point was saturated at 6 inches.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2024-07-18

Applicant/Owner: Montana Dept. Of Transportation State: Montana Sampling Point: DP10w

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

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

Subregion (LRR): E 43A Lat: 48.103981 Long: -115.4136463 Datum: NAD 83

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

PSS wetland with organic soils in center of bog birch (Betula pumila) carr. No upland point - an isolated data point historically has been taken in this location.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Betula pumila	40	✔	OBL
2. Salix barclayi	5		FACW
3.			
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Carex lasiocarpa	10	✔	OBL
2. Comarum palustre	10	✔	OBL
3. Persicaria amphibia	10	✔	OBL
4. Phalaris arundinacea	10	✔	FACW
5. Carex vesicaria	5		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		105 (B)

Prevalence Index = B/A = 1.16

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

PSS dominated by bog birch (Betula pumila). Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP10w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/2	100					Peat	Sulfidic odor.
-								
-								
-								
-								
-								
-								
-								

[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:

Histosol with 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 Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 1

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:

Pockets of inundated vegetation. Saturated to the surface with a sulfidic odor.

MDT Montana Wetland Assessment Form (revised March 2008)

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

3. Evaluation Date: 07/17/2024 **4. Evaluator(s):** R McEldowney, E Reynaud, R Baumgarten **5. Wetlands/Site #(s):** Schrieber Lake

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

ii. Approx. Stationing or Mileposts: Approximately Milepost 53.8

iii. Watershed: 1

Watershed Name, County: Kootenai, Lincoln

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

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

8. Wetland size: 55.660 acres (measured)

9. Assessment area (AA): 55.660 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

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

Abbreviations: *(see manual for definitions)*

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

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

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

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

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

RARE

12. General condition of AA:

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

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

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

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Spotted knapweed, Canada thistle, orange hawkweed, field bindweed, oxeye daisy, St. Johnswort, and common toadflax.

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

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

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

Comments: Aquatic bed, emergent, scrub-shrub vegetation classes occur onsite.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

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

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

Primary or critical habitat (list species)	Secondary habitat (list species)	Incidental habitat (list species)
	Grizzly Bear(D)	North American Wolverine(S) Canada Lynx(S) Spalding's Catchfly(S)

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

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

Sources for documented use (e.g. observations, records, etc): USFWS IPAC. A young female grizzly was killed by a vehicle on the adjacent US Highway 2 in 2022. USFWS and USFS have observed a number of grizzly bears in the area for several years.

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

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

Primary or critical habitat (list species)	Secondary habitat (list species)	Incidental habitat (list species)
Western Toad(D) - S2S3	Fisher(D) - S2S3	Westslope cuthroat trout (S2), fisher (S3)
Salix candida (S3/S4),Western toad (S2)	Townsend's big-eared bat (S3), hoary bat	

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

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

Sources for documented use (e.g. observations, records, etc): MDT BRR. USFS, MTNHP, and MFWP databases and discussions with regional wildlife and fisheries biologists. Western toads were observed by MDT and Kootenai Nat'l Forest personnel in April 2011.

14C. General Wildlife Habitat Rating:

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

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

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

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

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

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

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

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

Comments: Good habitat diversity with substantial evidence of wildlife usage.

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

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

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

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	**.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: MDT, field observations, FishMT.

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

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

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

iii. Final Score and Rating: 0.7M **Comments:** Brook trout documented in Schrieber Creek immediately up and downstream of Schrieber Lake by FWP in 2011 (MFISH query). Westslope cutthroat trout documented upstream, outside the project area. Largemouth bass and bluegill observed north of the site.

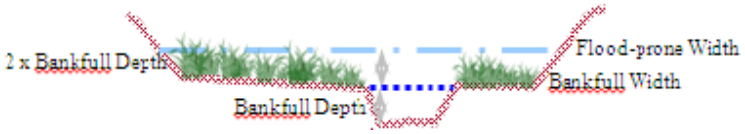
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

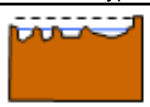
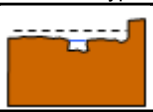
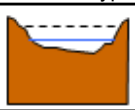
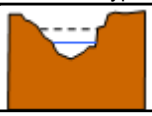
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

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

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

25 /	10 =	**2.50**
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*



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

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** Stream channels in AA have free access to most of their floodplains. Floodplains are dominated by herbaceous vegetation.

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

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

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

Comments: Extensive areas of inundation, much greater than 5 acre-feet, observed in 2024 and previous monitoring events.

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

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

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

Comments: AA has potential to receive minor sedimentation from nearby US Hwy 2 and adjacent hillsides that have been logged.

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

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

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

Comments: Shorelines and banks are well vegetated primarily with reed canary grass, with lesser cover by sedges.

14I. Production Export/Food Chain Support:

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

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

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

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

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

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

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

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

i. Discharge Indicators

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

ii. Recharge Indicators

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

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

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

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

14K. Uniqueness:

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

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

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

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

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

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

iii. Rating:

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

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

General Site Notes
The beaver dam impounding water at the outlet of Schrieber Lake first observed in 2019 appeared to be inactive during the 2024 site visit. No sign of freshly cut sticks or newly placed packed mud was observed.

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

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	M	0.80	1	44.53	
B. MT Natural Heritage Program Species Habitat	H	0.90	1	50.09	
C. General Wildlife Habitat	E	1.00	1	55.66	*
D. General Fish Habitat	M	0.70	1	38.96	
E. Flood Attenuation	M	0.60	1	33.40	
F. Short and Long Term Surface Water Storage	H	1.00	1	55.66	*
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	55.66	
H. Sediment/Shoreline Stabilization	H	1.00	1	55.66	
I. Production Export/Food Chain Support	H	1.00	1	55.66	*
J. Groundwater Discharge/Recharge	H	1.00	1	55.66	
K. Uniqueness	H	1.00	1	55.66	*
L. Recreation/Education Potential (bonus points)	H	0.20	1	11.13	
Totals:		10.20	11.00	567.73	
Percent of Possible Score			93%		

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

___ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**

_X_ Score of 1 functional point for Uniqueness; **or**

___ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**

_X_ Percent of possible score > 80% (round to nearest whole #).

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

___ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**

_X_ Score of .9 or 1 functional point for General Wildlife Habitat; **or**

___ Score of .9 or 1 functional point for General Fish Habitat; **or**

___ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**

___ Score of .9 functional point for Uniqueness; **or**

_X_ Percent of possible score > 65% (round to nearest whole #).

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

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

___ "Low" rating for Uniqueness; **and**

___ Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**

___ Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: I

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

Scientific Name	Common Name	WMVC Indicator Status[1]
Abies grandis	Grand fir	FACU
Achillea millefolium	Common yarrow	FACU
Agrostis capillaris	Colonial bentgrass	FAC
Agrostis scabra	Rough bentgrass	FAC
Agrostis stolonifera	Spreading bentgrass	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	Meadow foxtail	FAC
Alyssum alyssoides	Pale madwort	UPL
Amelanchier alnifolia	Saskatoon serviceberry	FACU
Antennaria microphylla	Littleleaf pussytoes	UPL
Antennaria spp.	Pussytoes	N/A
Apocynum androsaemifolium	Spreading dogbane	FACU
Arctostaphylos uva-ursi	Kinnikinnick	FACU
Arnica cordifolia	**Heartleaf arnica**	**UPL**
Berberis repens	Creeping barberry	UPL
Berteroa incana	Hoary alyssum	UPL
Betula pumila	Bog birch	OBL
Bromus carinatus	Mountain brome	UPL
Bromus inermis	Smooth brome	UPL
Bromus tectorum	Cheatgrass	UPL
Calamagrostis rubescens	Pinegrass	UPL
Campanula rotundifolia	Bluebell bellflower	FACU
Carex aquatilis	Water sedge	OBL
Carex bebbii	Bebb's sedge	OBL
Carex geyeri	Geyer's sedge	UPL
Carex inops	Sun sedge	UPL
Carex lasiocarpa	Woollyfruit sedge	OBL
Carex nebrascensis	Nebraska sedge	OBL
Carex pellita	**Woolly sedge**	**OBL**
Carex simulata	Analogue sedge	OBL
Carex spp.	Sedge	N/A
Carex utriculata	Northwest territory sedge	OBL
Carex vesicaria	Blister sedge	OBL
Carex stipata	Stalkgrain sedge	OBL
Centaurea stoebe	Spotted knapweed	UPL
Cirsium arvense	Canadian thistle	FAC

Scientific Name	Common Name	WMVC Indicator Status[1]
Cirsium vulgare	Bull thistle	FACU
Comarum palustre	Purple marshlocks	OBL
Convolvulus arvensis	Field bindweed	UPL
Cornus canadensis	Bunchberry dogwood	FAC
Crataegus douglasii	Black hawthorn	FAC
Cynoglossum officinale	Houndstongue	FACU
Dactylis glomerata	Orchardgrass	FACU
Deschampsia caespitosa	Tufted hairgrass	FACW
Eleocharis palustris	Common spikerush	OBL
Elymus glaucus	Blue wildrye	FACU
Elymus repens	Quackgrass	FAC
Elymus trachycaulus	Slender wheatgrass	FAC
Epilobium ciliatum	Fringed willowherb	FACW
Equisetum arvense	Field horsetail	FAC
Festuca rubra	Red fescue	FAC
Fragaria virginiana	Virginia strawberry	FACU
Galium triflorum	Fragrant bedstraw	FACU
Geum macrophyllum	Largeleaf avens	FAC
Glyceria grandis	American mannagrass	OBL
Glyceria striata	Fowl mannagrass	OBL
Gnaphalium palustre	Western marsh cudweed	FACW
Hieracium aurantiacum	Orange hawkweed	NL
Hieracium scouleri	Scouler's woollyweed	NL
Hypericum perforatum	Common St. Johnswort	FACU
Juncus nodosus	Knotted rush	OBL
Juncus tenuis	Poverty rush	FAC
Larix occidentalis	Western larch	FACU
Lemna minor	Common duckweed	OBL
Lepidium draba	Whitetop	UPL
Leucanthemum vulgare	Oxeye daisy	FACU
Linaria dalmatica	Dalmatian toadflax	UPL
Linaria vulgaris	Butter-and-eggs	UPL
Linnaea borealis	Twinflower	FACU
Lonicera utahensis	**Utah honeysuckle**	**FAC**
Maianthemum stellatum	Starry false lily of the valley	FAC
Mentha arvensis	**American wild mint**	**FACW**
Moss	Sphagnum/Aulacomnium moss	N/A
Myriophyllum sibiricum	Shortspike watermilfoil	OBL
Nassella viridula	Green needlegrass	UPL

Scientific Name	Common Name	WMVC Indicator Status[1]
Nuphar polysepala	Rocky Mountain pond lily	OBL
Onosmodium bejariense var. bejariense	Soft-hair marbleseed	UPL
Pascopyrum smithii	Western wheatgrass	FACU
Penstemon confertus	Yellow beardtongue	UPL
Penstemon spp.	Beardtongue	N/A
Persicaria amphibia	Water smartweed	OBL
Phalaris arundinacea	Reed canarygrass	FACW
Phleum pratense	Timothy	FACU
Picea engelmannii	Englemann spruce	FAC
Picea glauca	**White spruce**	**FAC**
Pinus contorta	Lodgepole pine	FAC
Pinus monticola	Western white pine	FACU
Pinus ponderosa	Ponderosa pine	FACU
Plantago major	Common plantain	N/A
Poa compressa	Flat-stem bluegrass	FACU
Poa palustris	Fowl bluegrass	FAC
Poa pratensis	Kentucky bluegrass	FAC
Poa spp.	Bluegrass	N/A
Potentilla anserina	Silverweed cinquefoil	OBL
Potentilla norvegica	Norwegian cinquefoil	FAC
Prunus virginiana	**Chokecherry**	**FACU**
Pseudoroegneria spicata	Bluebunch wheatgrass	UPL
Pseudotsuga menziesii	Douglas fir	FACU
Rhamnus alnifolia	Alderleaf buckthorn	FACW
Rosa woodsii	Woods' rose	FACU
Rumex acetosa	Garden sorrel	FAC
Rumex acetosella	Common sheep sorrel	FACU
Salix barclayi	**Barclay's willow**	**FACW**
Salix bebbiana	Bebb's willow	FACW
Salix boothii	Booth's willow	FACW
Salix candida	Sageleaf willow	OBL
Salix geyeriana	Geyer willow	FACW
Salix lasiandra	Pacific willow	FACW
Salix spp.	Willow	N/A
Scirpus microcarpus	Panicled bulrush	OBL
Scutellaria galericulata	Hooded skullcap	OBL
Shepherdia canadensis	Russet buffaloberry	UPL
Sisymbrium altissimum	Tall tumblemustard	FACU
Symphoricarpos albus	Common snowberry	FACU

Scientific Name	Common Name	WMVC Indicator Status[(1)]
Symphyotrichum spathulatum	Western mountain aster	FAC
Taraxacum officinale	Common dandelion	FACU
Thlaspi arvense	Field pennycress	UPL
Trifolium aureum	Golden clover	UPL
Typha latifolia	Broadleaf cattail	OBL
Urtica dioica	Stinging nettle	FAC
Utricularia minor	Lesser bladderwort	OBL
Vaccinium spp.	Huckleberry	N/A
Verbascum thapsus	Common mullein	FACU

[1] 2020 NWPL (USACE 2020)

New species identified in 2024 are **bolded.**

NL changed to UPL for species.

NL changed to N/A for genus, algae, or moss.

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: 2024

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: 2024

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: 2024

Schrieber Lake: Photo Point Photographs

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

Photo Point: 2 – Photo 1
Bearing: 323 degrees
Location: Near corral
Year: 2024

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

Photo Point: 2 – Photo 2
Bearing: 205 degrees
Location: Near corral
Year: 2024

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

Photo Point: 2 – Photo 3
Bearing: 162 degrees
Location: Near corral
Year: 2024

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: 2024

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: 2024

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

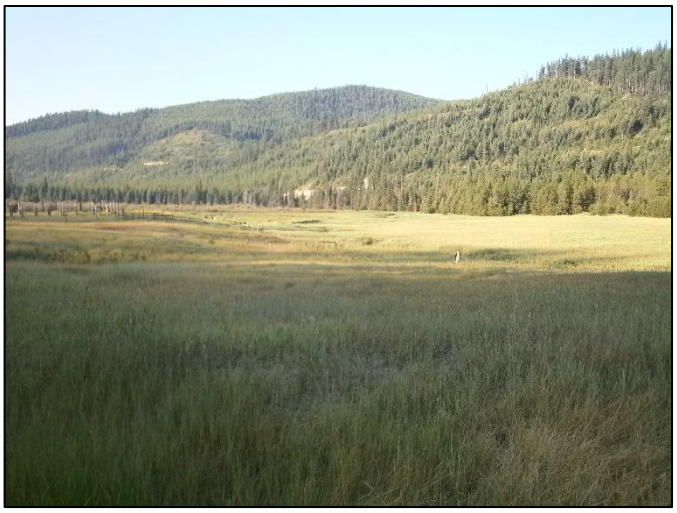


Photo Point: 3 Location: West of corrals
Bearing: 183 degrees Year: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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: 2024

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

Photo Point: 9 – Photo 1 Location: Upland island, site center
Bearing: 323 degrees Year: 2024

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

Photo Point: 9 – Photo 2 Location: Upland island, site center
Bearing: 120 degrees Year: 2024

Schrieber Lake: Photo Point Photographs

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

Photo Point: 10
Bearing: 39 degrees
Location: Overlook
Year: 2024

Schrieber Lake: Vegetation Transect Photographs

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

Transect 1: Start
Bearing: 251 degrees
Location: T-1
Year: 2024

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

Transect 1: End
Bearing: 71 degrees
Location: T-1
Year: 2024

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

Transect 2: Start
Bearing: 152 degrees
Location: T-2
Year: 2024

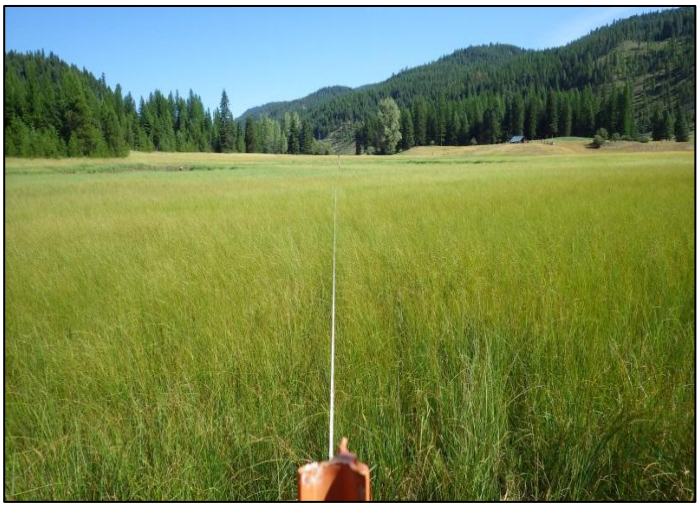
Schrieber Lake: Vegetation Transect Photographs

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

Transect 2: End Location: T-2
Bearing: 332 degrees Year: 2024

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

Transect 3: Start Location: T-3
Bearing: 175 degrees Year: 2024



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

Transect 3: End Location: T-3
Bearing: 355 degrees Year: 2024

Schrieber Lake: Data Point Photographs

Data Point: DP01w Location: Veg Comm. 3
Year: 2024

Data Point: DP01u Location: Veg Comm. 1
Year: 2024

Data Point: DP02w Location: Veg Comm. 3
Year: 2024

Data Point: DP02u Location: Veg Comm. 14
Year: 2024

Data Point: DP03w Location: Veg Comm. 3
Year: 2024

Data Point: DP03u Location: Veg Comm. 5
Year: 2024

Schrieber Lake: Data Point Photographs

Data Point: DP04w Location: Veg Comm. 8
Year: 2024

Data Point: DP04u Location: Veg Comm. 5
Year: 2024

Data Point: DP05w Location: Veg Comm. 3
Year: 2024

Data Point: DP05u Location: Veg Comm. 5
Year: 2024

Data Point: DP06w Location: Veg Comm. 3
Year: 2024

Data Point: DP06u Location: Veg Comm. 5
Year: 2024

Schrieber Lake: Data Point Photographs

Data Point: DP07w Location: Veg Comm. 3
Year: 2024

Data Point: DP07u Location: Veg Comm. 1
Year: 2024

Data Point: DP08w Location: Veg Comm. 8
Year: 2024

Data Point: DP08u Location: Veg Comm. 1
Year: 2024

Data Point: DP09w Location: Veg Comm. 8
Year: 2024

Data Point: DP09u Location: Veg Comm. 1
Year: 2024

Schrieber Lake: Data Point Photographs

Data Point: DP-BETPUM Location: Veg Comm. 2
Year: 2024

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: 2024

Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 30° – North bank Year: 2016

Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 30° – North bank Year: 2024

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

Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 280° – Upstream Year: 2024

Schrieber Lake: Cross-Section Photographs

Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 10° – North bank Year: 2016

Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 10° – North bank Year: 2024

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

Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 315° – Downstream Year: 2024

Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 45° – Northeast bank Year: 2016

Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 45° – Northeast bank Year: 2024

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: 2024

Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 275° – West bank Year: 2016

Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 275° – West bank Year: 2024

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

Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 175° – Downstream Year: 2024

Schrieber Lake: Cross-Section Photographs

Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 265° – West bank Year: 2016

Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 265° – West bank Year: 2024

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

Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 240° – Upstream Year: 2024

Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 330° – North bank Year: 2016

Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 330° – North bank Year: 2024

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: 2024

Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 70° – East bank Year: 2016

Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 70° – East bank Year: 2024

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

Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 110° – Downstream Year: 2024

Schrieber Lake: Cross-Section Photographs

Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 20° – North bank Year: 2016

Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 20° – North bank Year: 2024

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

Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 50° – Upstream Year: 2024

Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 320° – North bank Year: 2016

Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 320° – North bank Year: 2024

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: 2024

Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 355° – North bank Year: 2016

Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 355° – North bank Year: 2024

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

Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 200° – Downstream Year: 2024

Schrieber Lake: Cross-Section Photographs

Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 110° – East bank Year: 2016

Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 110° – East bank Year: 2024

APPENDIX D

PFC Assessments & Surveyed Stream Cross Sections

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

Proper Functioning Condition – Standard Checklist

Name of Riparian-Wetland Area: Coyote Creek, Lower Schrieber Creek, MDT's Schrieber Lake Aquatic Resource Mitigation Site, Lincoln County, MT

Date: August and November 2024

Segment/Reach ID: CC1A-1, CC1A-2, CC1B-1, SC3-1, SC3-2, SC7-1

ID Team Observers: R. McEldowney, Keeghan Lauver, Cole Buller

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above bankfull is inundated in "relatively frequent" events. Entire adjacent wetland is permanently inundated or saturated. When high flows enter these reaches, they likely dissipate quickly with a slight increase in water surface elevation in the adjacent wetland.
		X	2) Where beaver dams are present they are active and stable. No beaver activity observed in these reaches.
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region). Following the first monitoring year and subsequent section measurements, the dimensionless parameters are within the range for the intended stream type (E).
X			4) Riparian-wetland area is widening or has achieved potential extent. The riparian-wetland area has achieved its potential extent.
X			5) Upland watershed is not contributing to riparian-wetland degradation. To date the upland watershed has not contributed to riparian-wetland degradation.

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery). The primarily herbaceous community is comprised of numerous species, including several sedge species, reed canarygrass, and forbs such as smartweed.
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery). Plant species diversity is relatively high.
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics. The plant species present are primarily OBL and FACW species, which is indicative that the riparian-wetland soil moisture regime is being maintained.
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events. Dense root masses present along entire length of both Coyote Creek and lower Schrieber Creek.
X			10) Riparian-wetland plants exhibit high vigor. The plants along this reach exhibit high vigor.
X			11) Adequate riparian-wetland vegetative cover is present to protect banks and dissipate energy during high flows. The streambanks have nearly 100 percent vegetative cover.
	X		12) Plant communities are an adequate source of coarse and/or large woody material (for maintenance/recovery). Plant communities primarily herbaceous along both channels.

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy. The high level of inundation, overflow benches, and vegetative roughness are adequate for energy dissipation.
		X	14) Point bars are revegetating with riparian-wetland vegetation. Point bars are not present in these E channel streams.
X			15) Lateral stream movement is associated with natural sinuosity. No evidence of bank erosion, stable streambanks, smooth channel margins.
X			16) System is vertically stable. See cross-sections, the channel is vertically stable and has been throughout the ten years of monitoring.
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition). No trends in headcutting, channel incision, or excessive deposition observed.

(Revised 1998)

Remarks:

The lower hay meadow within the project area contains constructed and reactivated portions of Coyote and Schrieber Creek. Both reaches have similar characteristics, typical of a meandering, low gradient, wet meadow, E-type stream. The banks are well vegetated with high root density. The pattern and profile of both streams appear stable after ten monitoring years, with little to no lateral or vertical movement observed. The extensive, well vegetated floodplain should readily dissipate the energy associated with high flow events. Minimal sedimentation has been observed in some areas of the stream, which is expected in this low gradient system. Therefore, these reaches were scored with a Proper Functioning Condition.

Summary Determination Functional Rating		**Remarks**
Proper Functioning Condition	X	These reaches consistently have water and are in dynamic equilibrium with the surrounding landscape.
Functional—At Risk		
Nonfunctional		
Unknown		
Trend for Functional—At Risk:		
Upward		
Downward		
Not Apparent		
Are factors contributing to unacceptable conditions outside the control of the manager?		
Yes		
No	X	
If yes, what are those factors?		
Flow regulations		
Channelization		
Augmented flows		
Mining activities		
Road encroachment		
Other (specify)		
Upstream channel conditions		
Oil field water discharge		

Proper Functioning Condition – Standard Checklist

Name of Riparian-Wetland Area: Upper Schrieber Creek, MDT's Schrieber Lake Aquatic Resource Mitigation Site, Lincoln County, MT

Date: August and November 2024

Segment/Reach ID: SC1-1, SC1-2

ID Team Observers: R. McEldowney, Keeghan Lauver, Cole Buller

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above bankfull is inundated in "relatively frequent" events. No evidence of overbank flows observed over the last ten years of monitoring. The system is ephemeral and incised. Given the infrequent and low volume flows that have occurred over the past 10 years it appears that a floodplain is unnecessary for this section of Schrieber Creek.
		X	2) Where beaver dams are present they are active and stable. No beaver activity observed, likely because there is no free flowing water in the upper portion of Schrieber Creek.
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region). This is a constructed stream. Previous evaluations have indicated that the dimensionless parameters are off target for the intended stream type (B). After 10 years of monitoring the stream appears to be stable, not exhibiting undue degradation or aggradation (see cross-sections). This suggests that the upper segment of Schrieber Creek is in dynamic equilibrium with the landscape.
X			4) Riparian-wetland area is widening or has achieved potential extent. The riparian-wetland area is restricted in this segment of Schrieber Creek due to the shape of the channel, and has therefore achieved its potential extent.
X			5) Upland watershed is not contributing to riparian-wetland degradation. There does not appear to be excessive sediment load being delivered into the reach and the channel is able to handle the current flow regime. With the nearby development occurring just upgradient of the property boundary, it will be interesting to see if that has any affect on sediment or water flow in the channel.

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery). Primarily an herbaceous dominated community composed of reed canarygrass, quackgrass, and creeping meadow foxtail. While some barer patches are present overall the streambanks are well vegetated and are sufficient for maintenance and recovery.
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery). Vegetation is more diverse than in previous years, but remains dominated by non-natives, such as quackgrass, reed canarygrass, meadow foxtail. Some willows were observed occasionally along the channel margins. More forbs are also present.
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics. FAC/FACW species are dominant, indicating that the riparian-wetland soil moisture regime is present.

Yes	No	N/A	VEGETATION
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events. Based on the lack of bank erosion or vertical downcutting, it appears that the streambank vegetation is sufficient to withstand any streamflow events that have occurred in this portion of Schrieber Creek over the past 10 years. Some bare patches exist, but there are significant patches of deep-rooted plants that will eventually fill in the gaps along the streambank.
X			10) Riparian-wetland plants exhibit high vigor. Plants are well-formed and did not exhibit stress indicators.
X			11) Adequate riparian-wetland vegetative cover is present to protect banks and dissipate energy during high flows. Some patches have less cover than other areas, but overall there is adequate cover of riparian-wetland vegetation present to protect the streambanks, especially in consideration of infrequent and low volume flows this section of Schrieber Creek experiences on a regular basis.
		X	12) Plant communities are an adequate source of coarse and/or large woody material (for maintenance/recovery). Based on the size of this segment of Schrieber Creek and its ephemeral nature, woody material is not needed for this reach to function properly. Some woody material was placed in this channel when it was constructed and it has not moved.

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy. The engineered drop structures and imported coarse streambed material appear adequate at dispersing energy.
X			14) Point bars are revegetating with riparian-wetland vegetation. Point bars are limited in these reaches, but where they exist they are vegetated with riparian-wetland vegetation.
	X		15) Lateral stream movement is associated with natural sinuosity. No lateral movement observed over the ten-year monitoring period. This is due to its ephemeral nature and the lack of consistent bankfull or higher flow events.
X			16) System is vertically stable. The cross-sections indicate that these reaches are vertically stable, and have been over the past 10 years. Very little to no change has occurred.
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition). No headcutting, channel incision, or excessive deposition observed.

(Revised 1998)

Remarks:

See individual comments. The pattern and profile appear stable after ten monitoring years. There has been no obvious evidence of frequent out of bank flooding observed. This constructed reach appears to be functioning properly, although revegetation has been slower here than in other reaches due to its ephemeral nature and steeper side slopes. Patches of less vegetation and exposed geotextile fabric in the banks is observed in some locations along this reach; however, this reach is stable and in dynamic equilibrium for the amount of water flow and sediment that is being delivered to the stream on a regular basis. The area upstream of these two reaches is being developed into residential lots. It will be important to continue to monitor these upper reaches of Schrieber Creek to determine if that development is having any affect on the channel.

Summary Determination Functional Rating		**Remarks**
Proper Functioning Condition	X	Constructed ephemeral channel reach, characterized by infrequent and low volume discharges.
Functional—At Risk		
Nonfunctional		
Unknown		
Trend for Functional—At Risk:		
Upward		
Downward		
Not Apparent		
Are factors contributing to unacceptable conditions outside the control of the manager?		
Yes		
No	X	
If yes, what are those factors?		
Flow regulations		
Channelization		
Augmented flows		
Mining activities		
Road encroachment		
Other (specify)		
Upstream channel conditions		
Oil field water discharge		

Proper Functioning Condition – Standard Checklist

Name of Riparian-Wetland Area: Middle Schrieber Creek, MDT's Schrieber Lake Aquatic Resource Mitigation Site, Lincoln County, MT

Date: August and November 2024

Segment/Reach ID: SC2A-1, SC2A-2, SC2B-1

ID Team Observers: R. McEldowney, Keeghan Lauver, Cole Buller

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above bankfull is inundated in "relatively frequent" events As with the upper reach of Schrieber Creek, no evidence of overbank flows has been observed over the last ten years of monitoring. Given the infrequent and low volume flows that have occurred over the past 10 years it appears that a floodplain is unnecessary for this middle section of Schrieber Creek.
		X	2) Where beaver dams are present they are active and stable No beaver activity observed.
	X		3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region) This is a constructed stream. Previous evaluations have indicated that the dimensionless parameters are off target for the intended stream type (B and C). After 10 years of monitoring the stream appears to be stable, not exhibiting undue degradation or aggradation (see cross-sections). This suggests that this middle segment of Schrieber Creek is in dynamic equilibrium with the landscape.
X			4) Riparian-wetland area is widening or has achieved potential extent This reach appears to have reached its potential extent with no clear increase in width from 2023.
X			5) Upland watershed is not contributing to riparian-wetland degradation There does not appear to be excessive sediment load being delivered into the reach and the channel is able to handle the current flow regime. With the nearby residential development occurring just upgradient of the property boundary, this situation may change in the future.

Yes	No	N/A	VEGETATION
	X		6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery) There is a forb-dominated community composed of primarily non-native graminoids such as reed canarygrass, quackgrass, bentgrass, and creeping meadow foxtail. Overall, the streambanks are well vegetated and are sufficient for maintenance and recovery.
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery) Numerous herbaceous species present, occasional willow species also present.
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics FAC/FACW species are dominant, indicating that a riparian-wetland soil moisture regime is present.
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events Dense root masses present along most of this reach. No bed or bank erosion observed, indicating that the streambank vegetation is adequate to withstand any streamflow events that have occurred over the past 10 years.

Yes	No	N/A	VEGETATION
X			10) Riparian-wetland plants exhibit high vigor No vegetative stress indicators were observed.
X			11) Adequate riparian-wetland vegetative cover is present to protect banks and dissipate energy during high flows. This reach has adequate cover of riparian-wetland vegetation to protect the streambanks and dissipate energy during any high flow events that may occur.
		X	12) Plant communities are an adequate source of coarse and/or large woody material (for maintenance/recovery) Based on the size of the middle reach of Schrieber Creek and its ephemeral nature, woody material is not needed for this reach to function properly. Some woody material was placed in this channel when it was constructed and it has not moved.

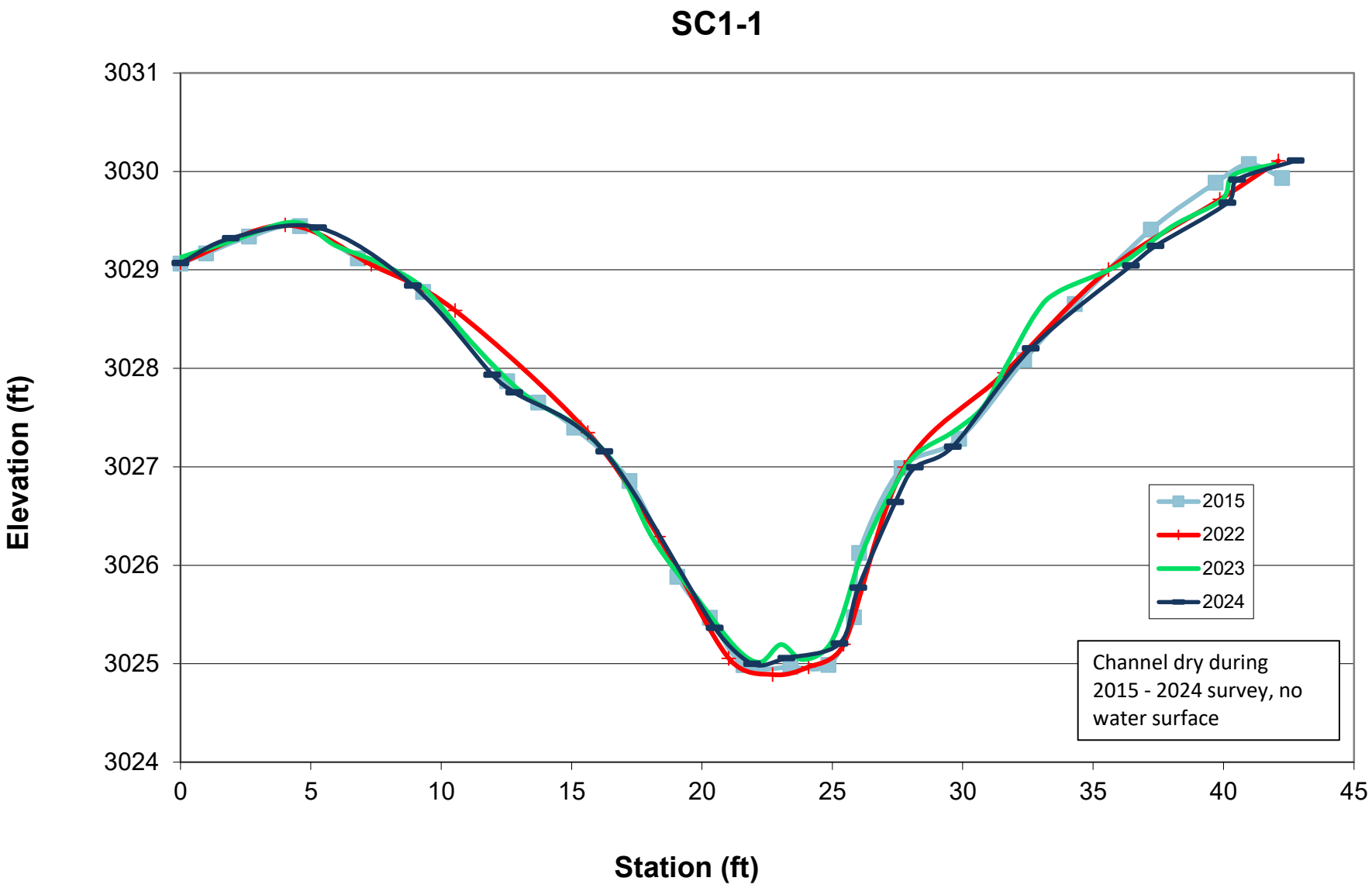
Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy The engineered drop structures and imported coarse streambed material appear adequate for dispersing energy.
X			14) Point bars are revegetating with riparian-wetland vegetation Point bars are limited in these reaches, but where they exist they are vegetated with riparian-wetland vegetation.
	X		15) Lateral stream movement is associated with natural sinuosity No lateral movement observed over the ten-year monitoring period. This is due to its ephemeral nature and the lack of consistent bankfull or higher flow events.
X			16) System is vertically stable The cross-sections indicate that these reaches are vertically stable, and have been over the past 10 years. Very little to no change has occurred.
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition) No head-cutting, channel incision, or excessive deposition observed.

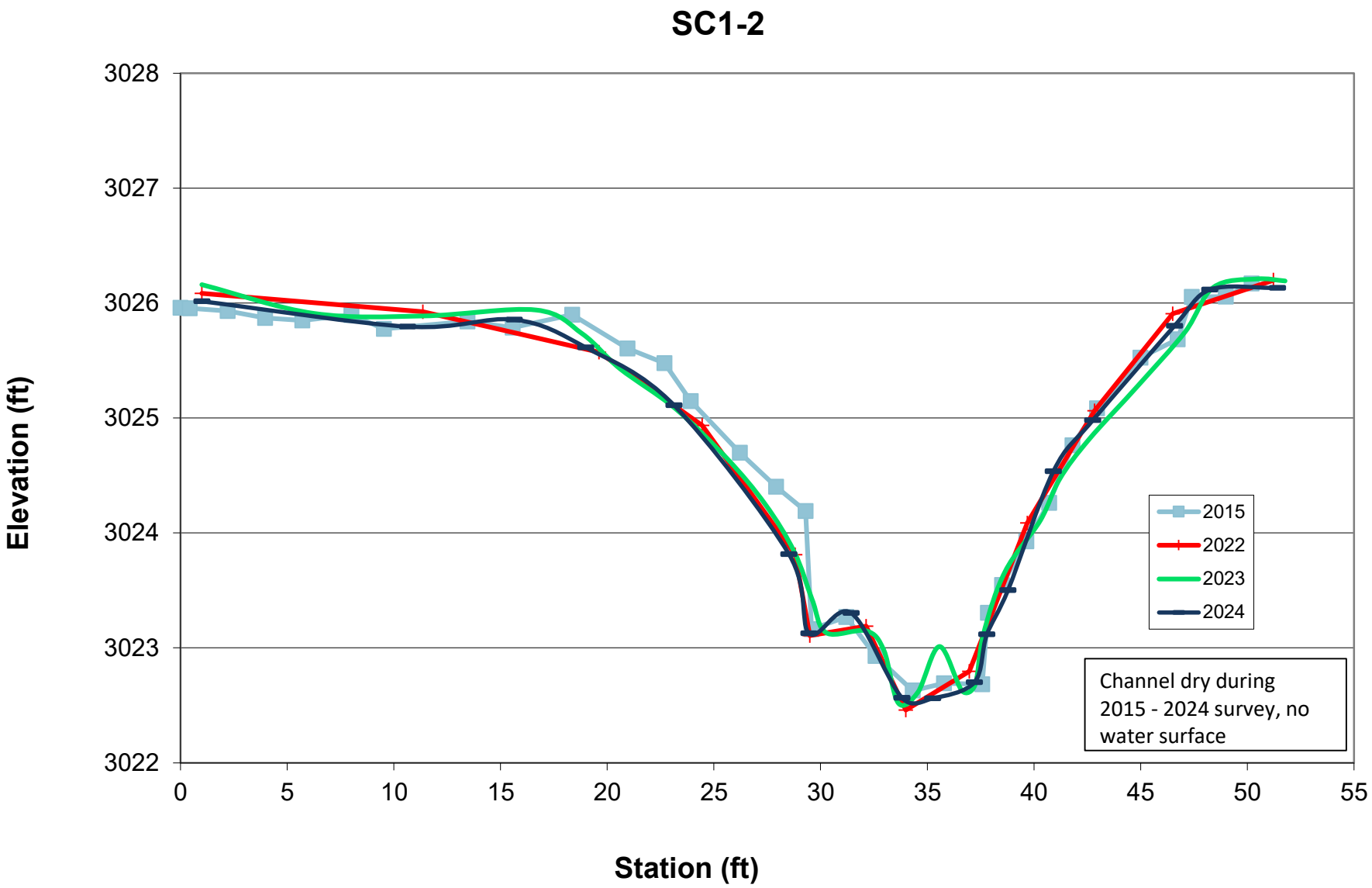
(Revised 1998)

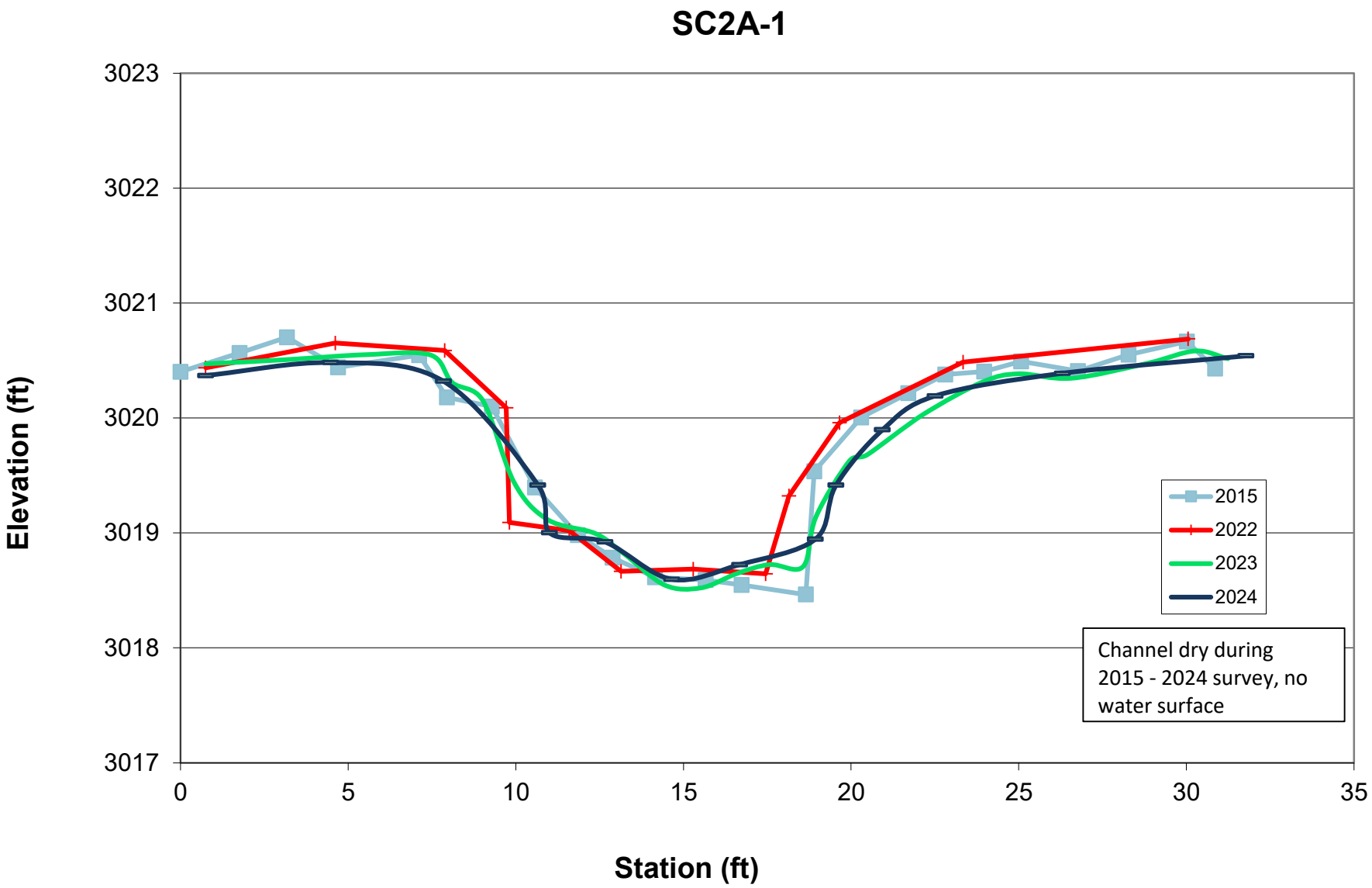
Remarks:

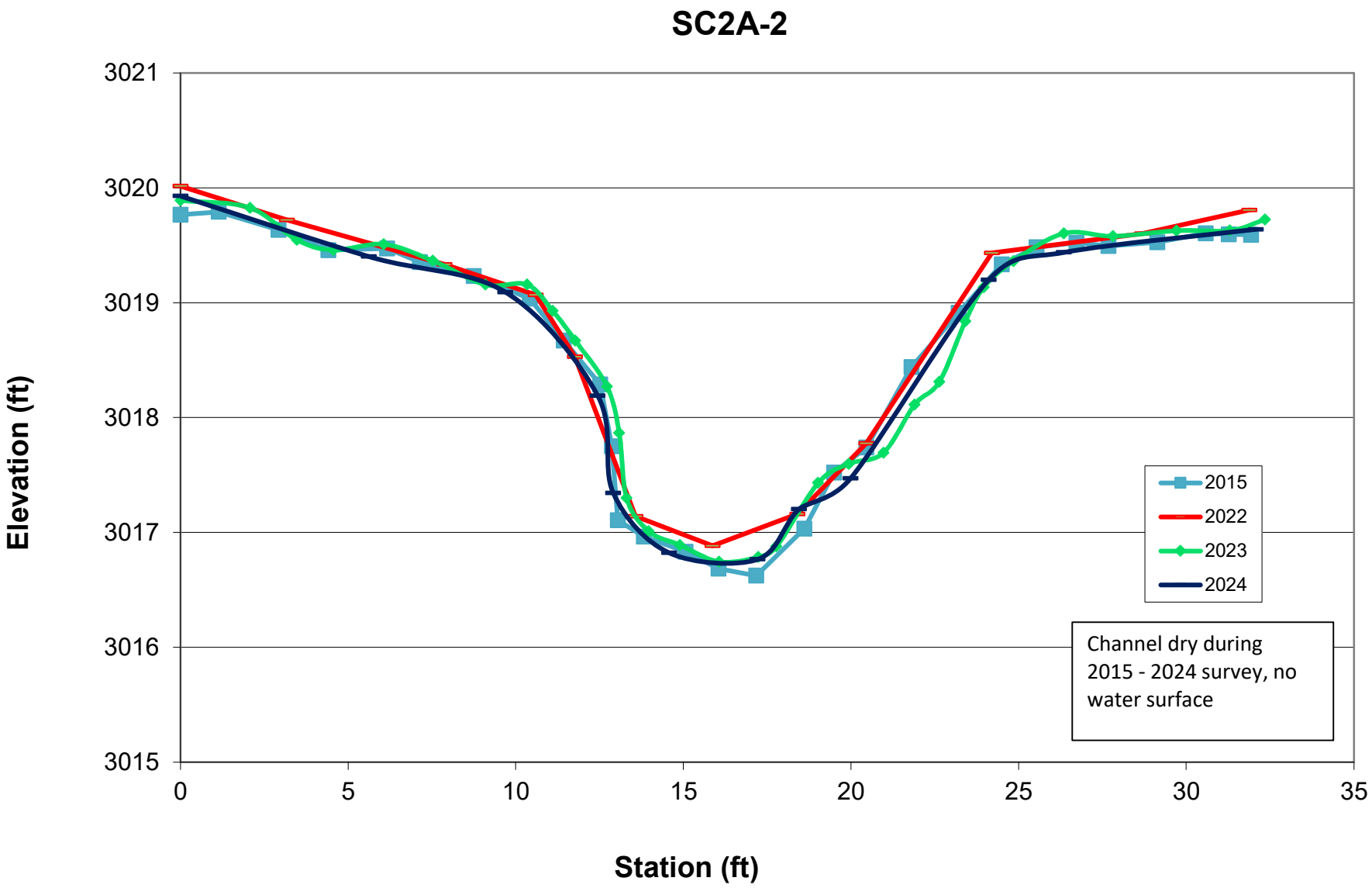
See individual comments. The pattern and profile appear stable after ten monitoring years. There has been no obvious evidence of frequent out-of-bank flooding observed. This constructed reach appears to be functioning properly and is more vegetated overall than the upper section of Schrieber Creek. This includes a much more vegetated channel bed, likely a result of increased moisture availability, a less steep channel gradient, and less steep channel side slopes.

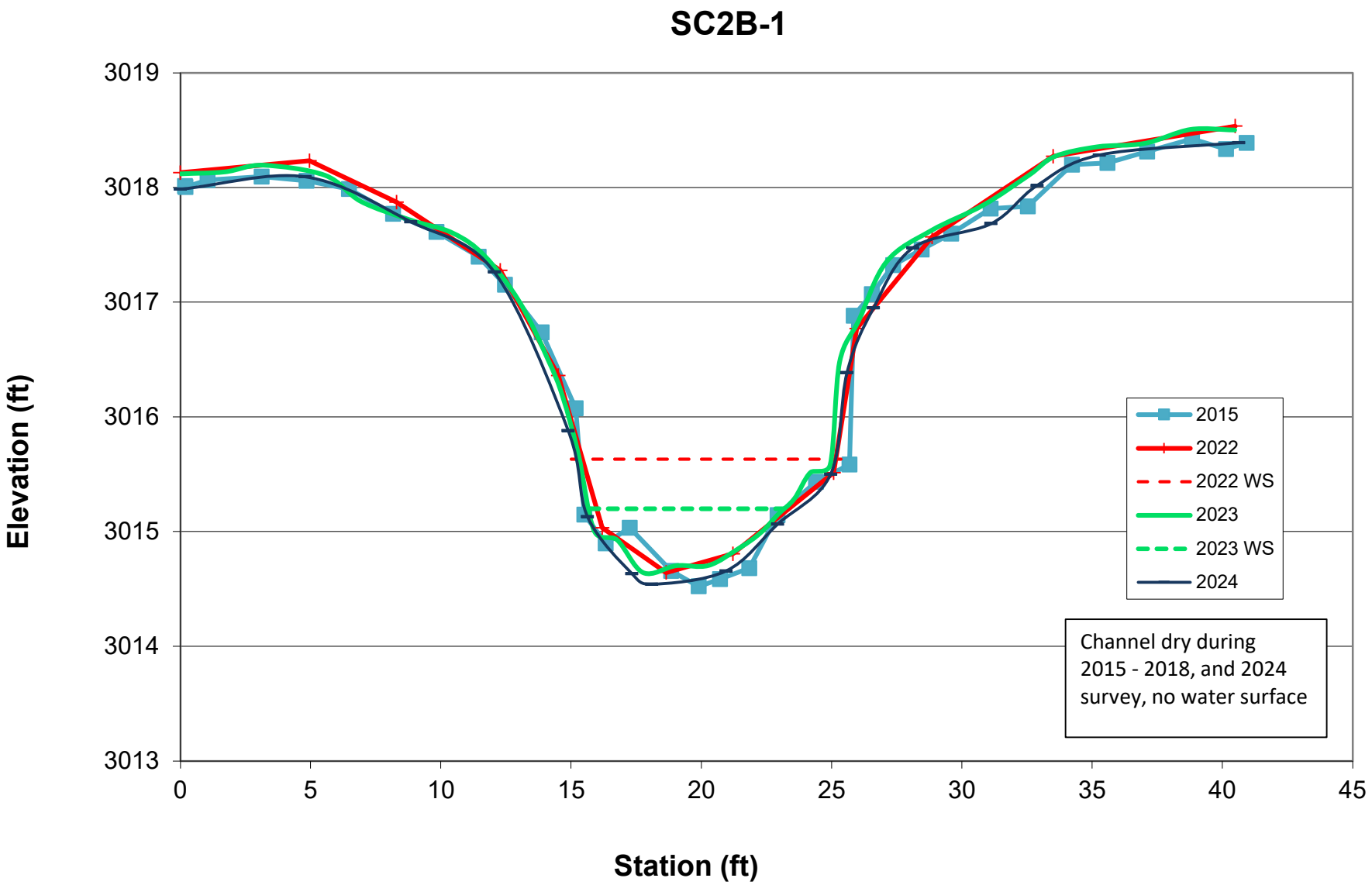
Summary Determination Functional Rating		**Remarks**
Proper Functioning Condition	X	Constructed ephemeral channel reach, characterized by infrequent and low volume discharges. Channel and streambanks are well vegetated with primarily herbaceous riparian-wetland vegetation.
Functional—At Risk		
Nonfunctional		
Unknown		
Trend for Functional—At Risk:		
Upward		
Downward		
Not Apparent		
Are factors contributing to unacceptable conditions outside the control of the manager?		
Yes		
No	X	
If yes, what are those factors?		
Flow regulations		
Channelization		
Augmented flows		
Mining activities		
Road encroachment		
Other (specify)		
Upstream channel conditions		
Oil field water discharge		

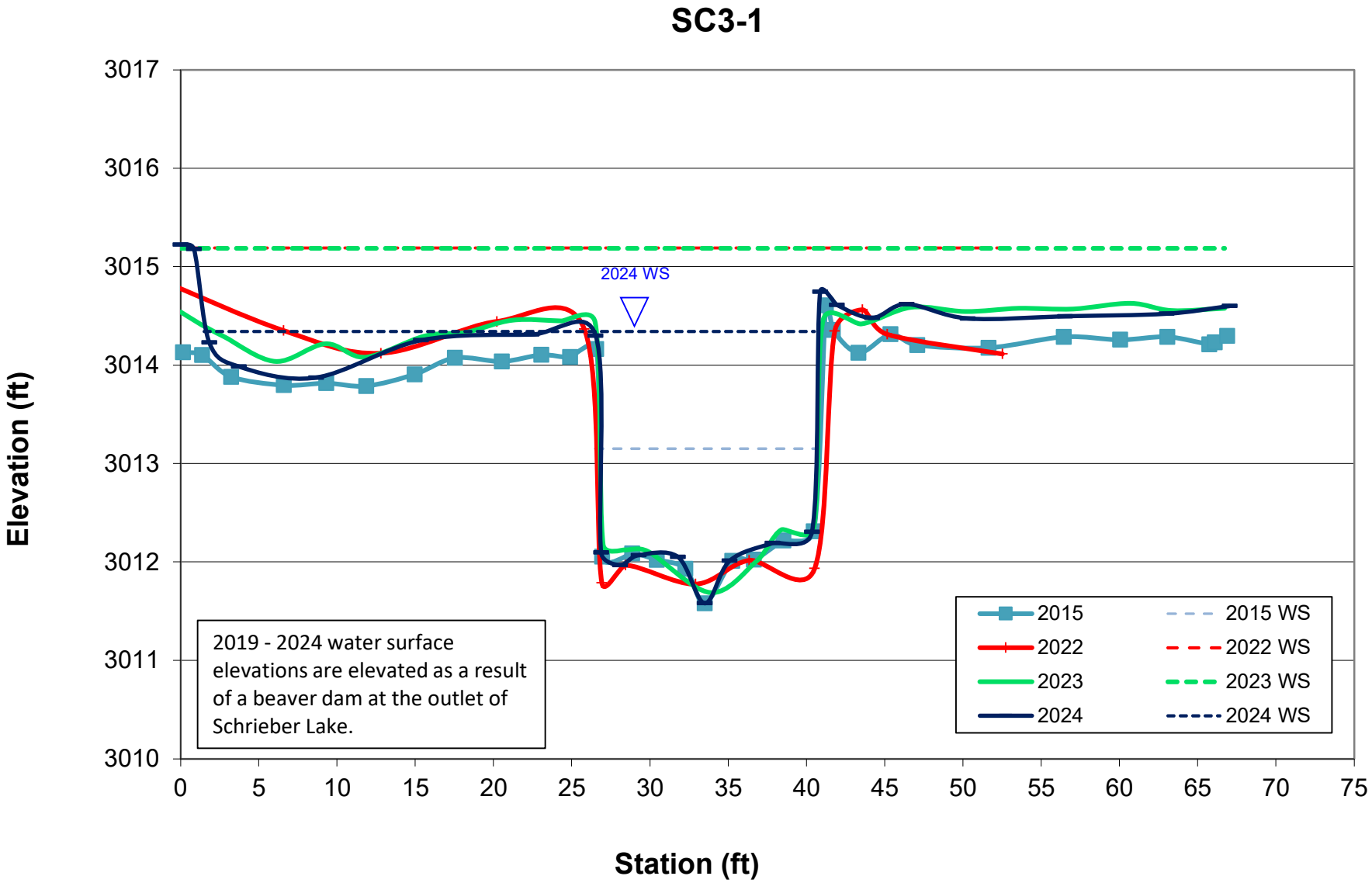

SC1-1
Elevation (ft)
3031
3030
3029
3028
3027
3026
3025
3024
0
5
10
15
20
25
30
35
40
45
Station (ft)
2015
2022
2023
2024
Channel dry during 2015 - 2024 survey, no water surface

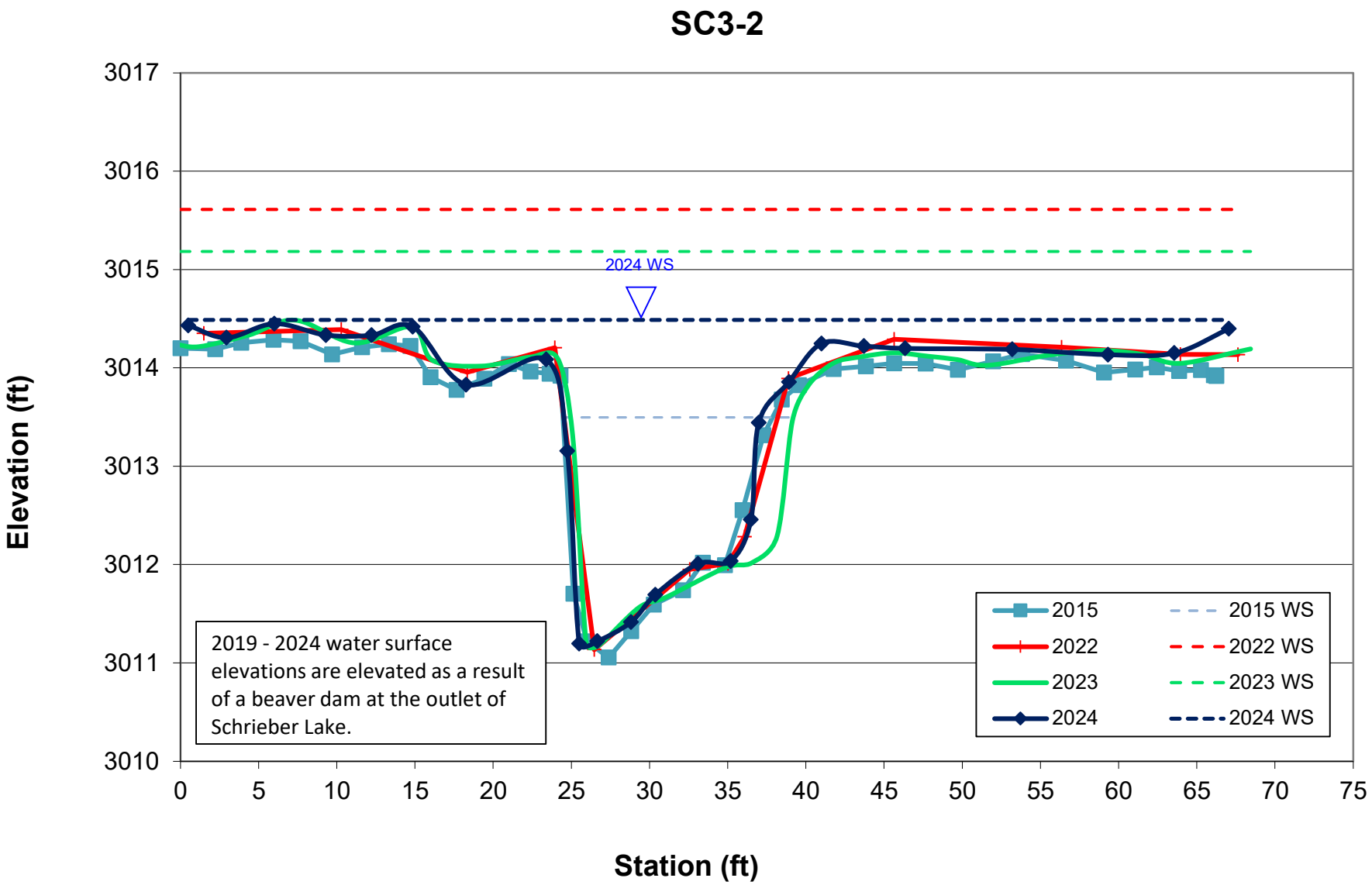

SC1-2
Elevation (ft)
3028
3027
3026
3025
3024
3023
3022
0
5
10
15
20
25
30
35
40
45
50
55
Station (ft)
2015
2022
2023
2024
Channel dry during 2015 - 2024 survey, no water surface

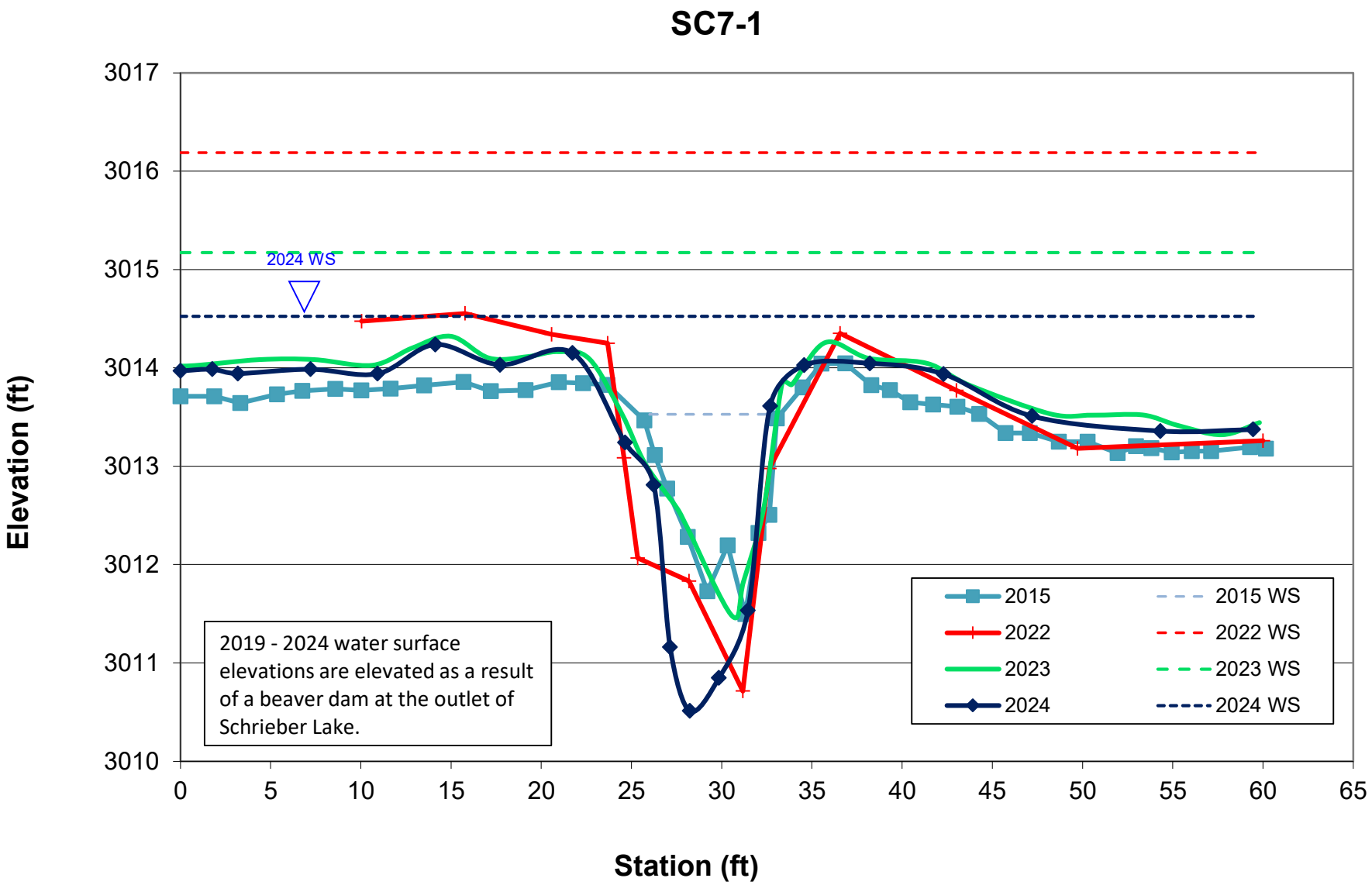

SC2A-1
Elevation (ft)
3023
3022
3021
3020
3019
3018
3017
0
5
10
15
20
25
30
35
Station (ft)
2015
2022
2023
2024
Channel dry during 2015 - 2024 survey, no water surface

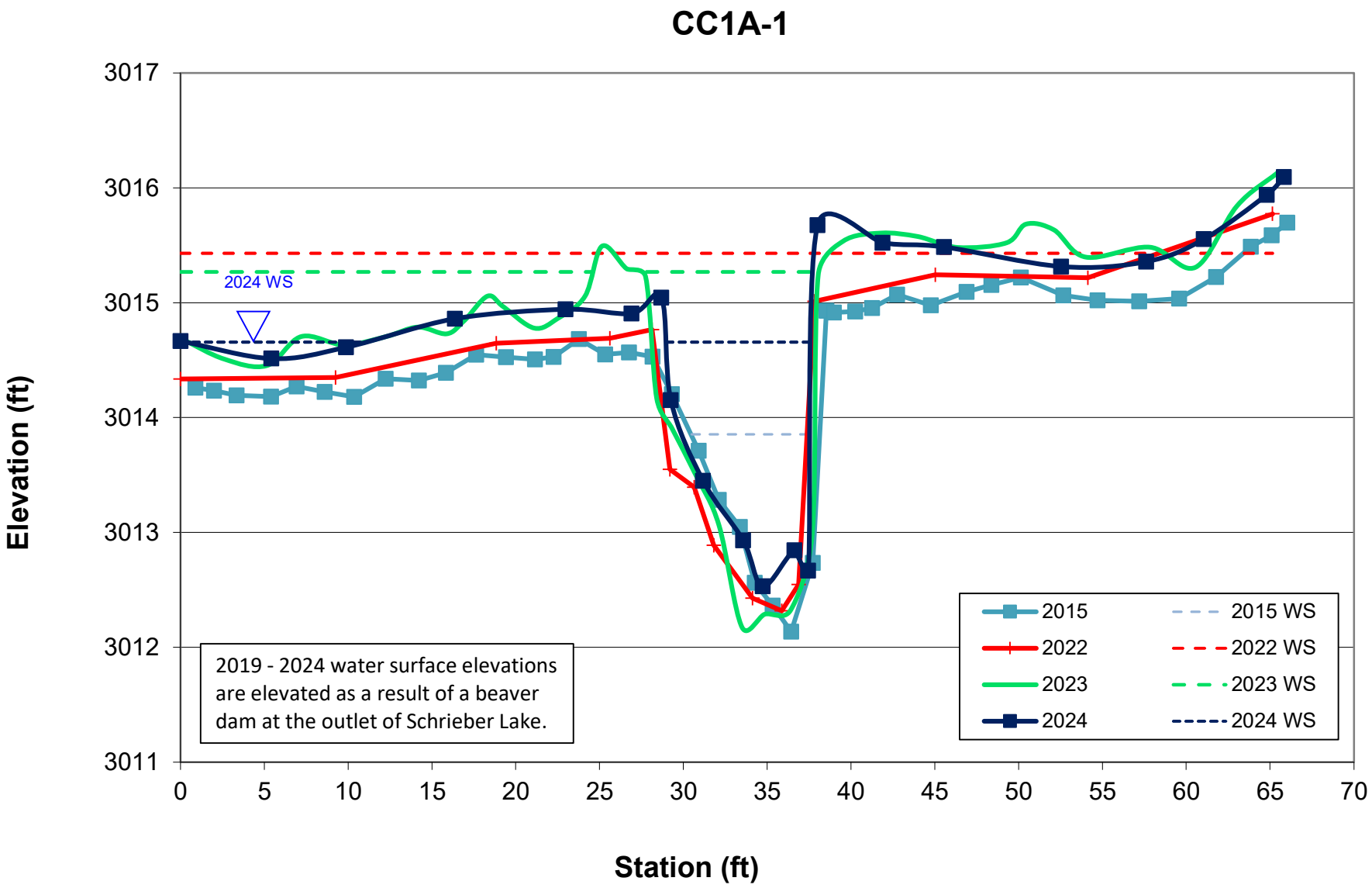

SC2A-2
Elevation (ft)
3021
3020
3019
3018
3017
3016
3015
0
5
10
15
20
25
30
35
Station (ft)
2015
2022
2023
2024
Channel dry during 2015 - 2024 survey, no water surface

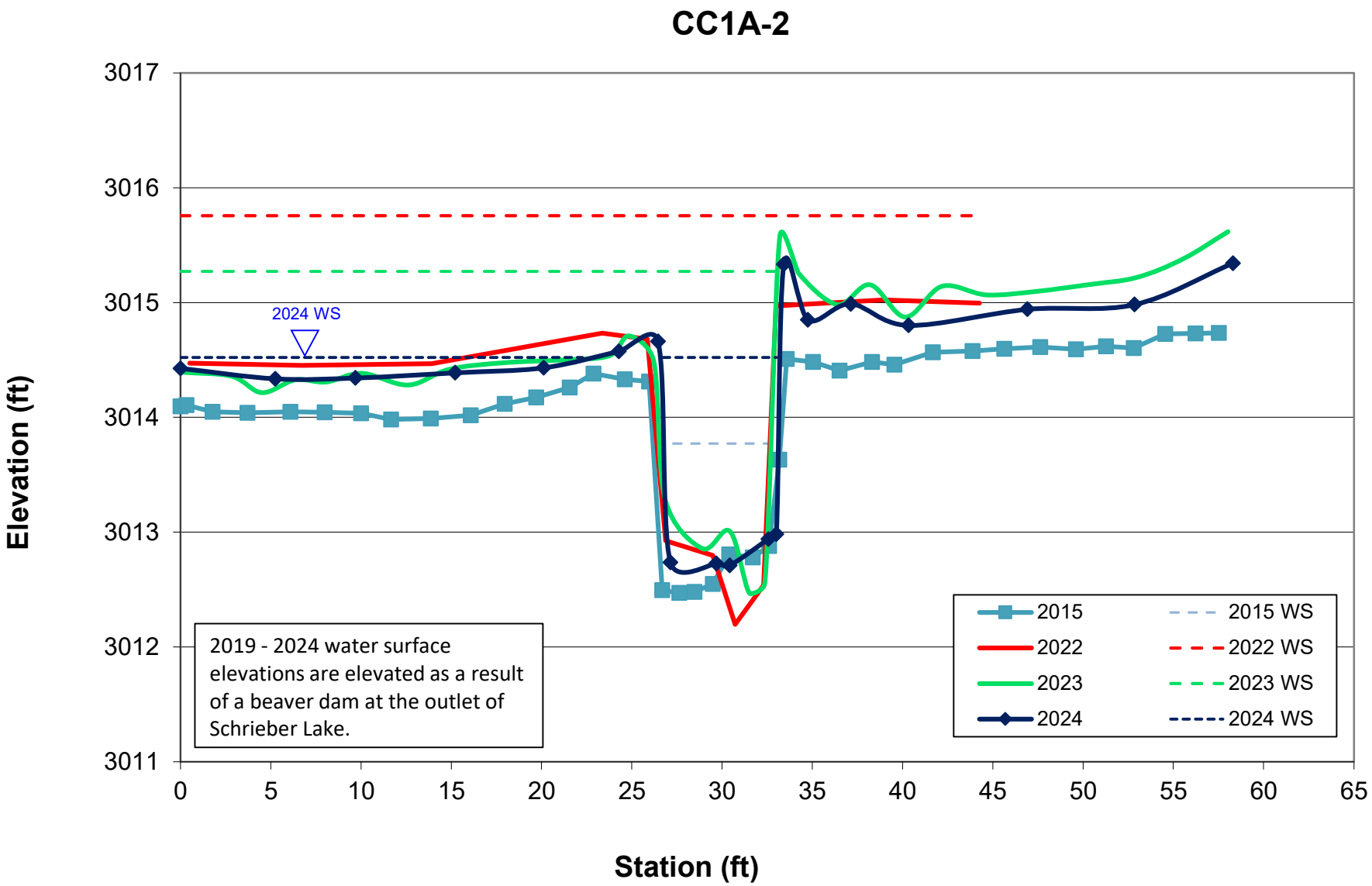

SC2B-1
Elevation (ft)
3019
3018
3017
3016
3015
3014
3013
0
5
10
15
20
25
30
35
40
45
Station (ft)
2015
2022
2022 WS
2023
2023 WS
2024
Channel dry during 2015 - 2018, and 2024 survey, no water surface

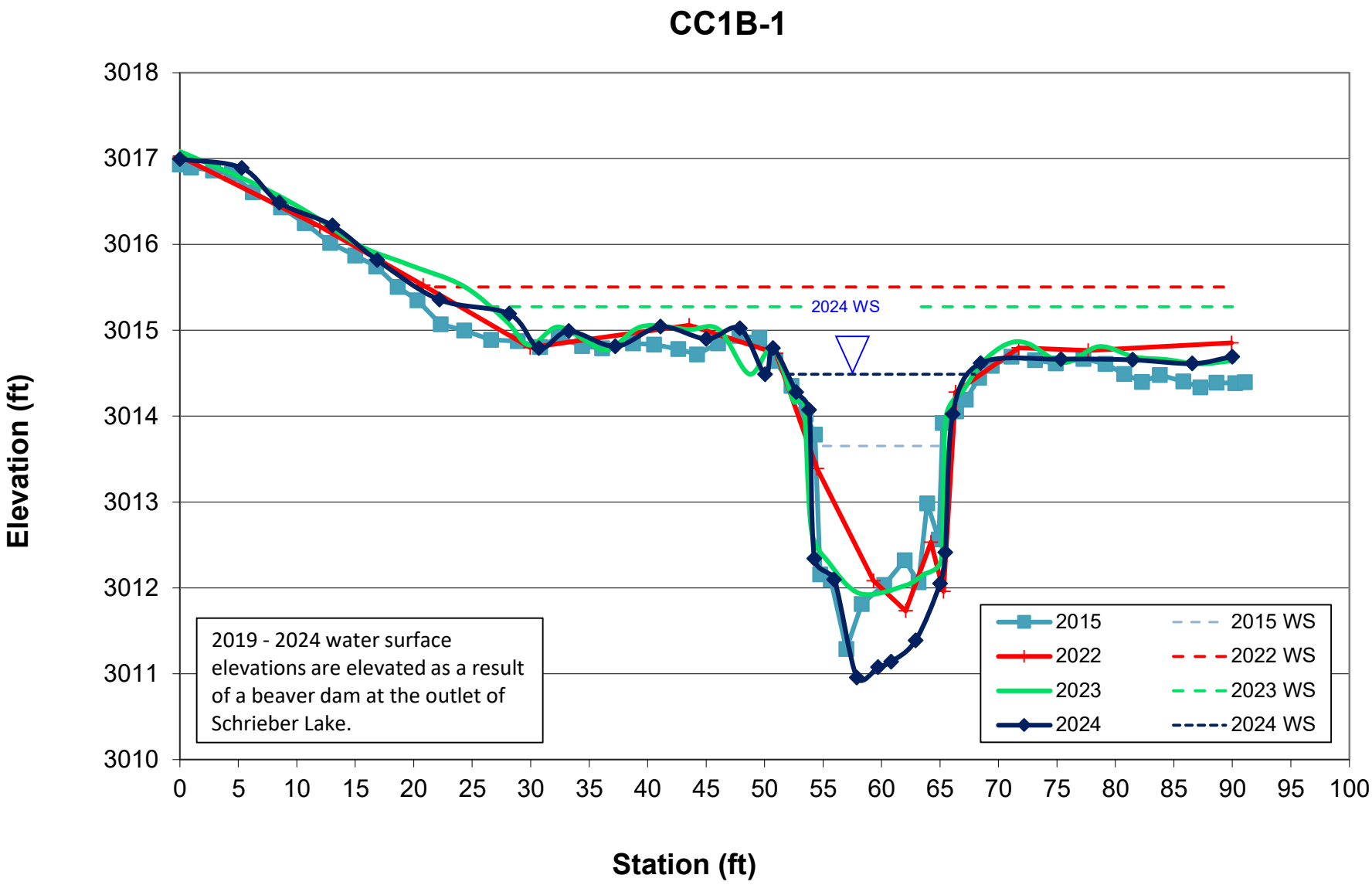

SC3-1
Elevation (ft)
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
Station (ft)
2024 WS
2019 - 2024 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2022
2022 WS
2023
2023 WS
2024
2024 WS


SC3-2
Elevation (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
Station (ft)
2024 WS
2019 - 2024 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2022
2022 WS
2023
2023 WS
2024
2024 WS


SC7-1
Elevation (ft)
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Station (ft)
2024 WS
2019 - 2024 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2022
2022 WS
2023
2023 WS
2024
2024 WS


CC1A-1
Elevation (ft)
3017
3016
3015
3014
3013
3012
3011
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
Station (ft)
2024 WS
2019 - 2024 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2022
2022 WS
2023
2023 WS
2024
2024 WS


CC1A-2
Elevation (ft)
3017
3016
3015
3014
3013
3012
3011
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Station (ft)
2024 WS
2019 - 2024 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2022
2022 WS
2023
2023 WS
2024
2024 WS


CC1B-1
Elevation (ft)
Station (ft)
3018
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
2024 WS
2019 - 2024 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2022
2022 WS
2023
2023 WS
2024
2024 WS