Montana Department of Transportation Wetland Mitigation Monitoring Report

SCHRIEBER MEADOWS MITIGATION SITE

Project Overview

MDT Project Number: NH 27 (021) UPN # 1027001 Watershed: Watershed #1 – Kootenai River Basin

Monitoring Year: 2021

Years Monitored: 11th year of monitoring

Corps Permit Number: NWO-2004-90280-MTH **SPA Authorization Number**: MDT-R1-88-2010

Monitoring Conducted By: Confluence Consulting Inc. Dates Monitoring Was Conducted: July 15, 2021

Purpose of the Approved Project:

The site was constructed to provide 17.25 acres of compensatory wetland mitigation credits and 35,551 stream mitigation credits for wetland and stream impacts associated with the US Highway 2 Swamp Creek – East project and highway impacts associated with future transportation project-related wetland and stream impacts in Watershed #1 – Kootenai River Basin. The project was designed to create new wetlands, restore degraded wetlands, and enhance existing wetlands by restoring natural hydrology in the meadow and constructing a series of shallow depressional wetland cells. The project restored the Coyote Creek channel and added 3,327 linear feet of stream length.

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

Latitude: 48.110423 Longitude: -115.41562 County: Lincoln Nearest Town: Libby, MT Map Included: See Figure 1, page 11

Mitigation Site Construction Started: Fall/2007 Construction Ended: Fall/2011 Dates of Any Recent Corrective or Maintenance Activities (since previous report):

Activity: Weed Spraying Date: June 30-July 1, 2021

Specific recommendations for any additional corrective actions: Weed treatment will continue in 2022. Treatment efforts should focus on the Canada thistle infestations concentrated in the northeast quadrant of the site.

Anticipated Wetland Credit Acres: 17.24

Wetland Credit Acres Generated to Date: 26.35

Stream Credits Generated to Date: 35,551

Previous Monitoring Reports:

https://www.mdt.mt.gov/publications/brochures/wetland mitigation.shtml

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

<u>Requirements</u> (from approved mitigation plan, banking instrument, or Department of Army (DA) permit conditions)

Performance Standards: A summary of performance standards, associated success criteria, and 2021 achievement status for the Schrieber Meadows site is provided in Table 1.

Table 1. Summary of Performance Standards

| Performance Standards | Success Criteria | Criteria Achieved Y/N | Discussion |
|----------------------------|--|-----------------------------|--|
| Wetland Characteristics | Meet the three parameter criteria for hydrology, vegetation, and soils as outlined in the 1987 Wetland Delineation Manual and 2010 Mountains, Valleys, Coast Region. | Y | Areas identified as wetland habitat within the mitigation site meet the three parameter criteria. |
| Wetland Hydrology | Soil saturation present for at least 12.5 percent of the growing season. | Υ | Areas identified as wetland habitat within the mitigation site exhibit soil saturation for a minimum 12.5 percent of growing season. |
| | Hydric soil conditions present or appear to be forming. | Υ | Hydric soil characteristics have developed throughout all constructed wetlands. |
| Hydric Soil | Soil is sufficiently stable to prevent erosion. | Υ | In 2021, disturbed soil was stable and did not exhibit signs of erosion. |
| | Soil is able to support plant cover. | Υ | Plant cover is well established across disturbed soils. |
| Hydrophytic | Achieved where combined absolute cover of facultative or wetter species is ≥70 percent | Y | Areas identified as wetland habitat within the mitigation site support a prevalence of hydrophytic vegetation (OBL, FACW, and FAC). |
| Vegetation | Montana State-listed noxious weeds do not exceed 5 percent absolute cover. | Y | State-listed noxious weeds are estimated below 5 percent absolute cover within wetland areas. |
| | Achieved when woody and riparian vegetation becomes established | N | Little to no woody cover is present or anticipated within the riparian areas adjacent to Coyote Creek. Woody plantings installed early on during this site's long history drowned following unanticipated high groundwater elevations. |
| | Noxious weeds do not exceed 10 percent cover within the riparian buffer areas. | Υ | State-listed noxious weeds are estimated between 3 to 5 percent absolute cover within the riparian buffer. |
| Riparian Buffer Success | Creditable buffer areas must have at least 50 percent aerial cover of non-noxious weed species by the end of the monitoring period. | Y | Non-noxious vegetation consists of greater than 70 percent cover, by a near-monoculture of reed canary grass, within riparian buffer areas. |
| | Achieved where combined aerial cover of riparian and stream bank vegetation communities is ≥70 percent. | Y | Riparian and stream bank vegetation communities support greater than 70 percent cover. |
| | Planted trees and shrubs will be considered successful where they exhibit 50 percent survival after 5 years. | N | Following planting installation, unanticipated high groundwater elevations drowned a majority of plantings by the end of the second growing season. Approximately 2 percent survival was noted in 2021. |
| Stream Bank Vegetation | Considered successful when banks are vegetated with a majority of deep-rooting riparian plant species having root stability indexes ≥6. | Y | Reed canary grass dominates the stream banks and has a root stability index of 9. |

| Performance Standards | Success Criteria | Criteria Achieved Y/N | Discussion |
|--------------------------------|--|-----------------------------|---|
| Channel Restoration Success | Revegetation along the new Coyote and Schrieber Creek channel corridors will be considered successful when banks are vegetated with a majority of deeprooting riparian and wetland herbaceous and woody plant species. | Y | The majority of stream bank vegetation along the constructed Coyote and Schrieber Creek channel corridors is dominated by reed canary grass, which has a stability rating of 9. |
| | The intent of the stream restoration is to allow for the stream to naturally migrate within the floodplain and to give it enough room to move and stabilize itself within the site. | Y | The stream has plenty of space within the floodplain for natural migration. The stream currently appears stable with no lateral adjustment observed following construction. |
| Open Water | It is the intent of the project to provide open water during the spring and early summer within excavated depressions. As the growing season progresses and the groundwater levels recede, it is anticipated that vegetation will germinate within the majority of the depressions. Open water with submerged and/or floating vegetation will therefore be considered successful and creditable. | Y | Excavated depressions within the very northern portion of the site experience seasonal drawdown and rooted hydrophytic vegetation development has been observed. The lower depressions appear to support perennial inundation with an established aquatic macrophyte community. |
| | Noxious weeds do not exceed 5 percent cover within upland buffer areas. | Y | In 2021, noxious weed cover was less than 5 percent within the upland buffer. |
| Upland Buffer | Any area disturbed within creditable buffer zone must have at least 50 percent aerial cover of non-weed species by end of monitoring period. | Y | Disturbed areas have established greater than 50 percent cover by non-weed species. |
| Weed Control | Will be based upon annual monitoring of the site to determine weed species and degree of infestation within the site, and control measures based upon the monitoring results will be implemented by MDT to minimize and/or eliminate the intrusion of State Listed Noxious weed species within the site. | Y | State-listed noxious weed species across the site have been monitored and mapped during each post-construction monitoring event. MDT administers an ongoing weed-control program. Weeds were sprayed on site in July 2021. |

Summary Data

Wetland Delineation — The wetland delineations conducted in 2004 and 2005, prior to construction of the project, identified four wetland areas that totaled approximately 15.56 acres within the mitigation project area. The pilot project constructed in 2007 resulted in an additional 2.38 acres of wetland habitat developing within the project boundary. After the second construction phase was completed, the delineation conducted in 2012 mapped a total of 47.58 acres of wetlands across the 56.95-acre site. A total of 46.47 acres of jurisdictional wetland and waters of the US (WUS) were delineated at the site in 2021 (Table 2; see maps in Appendix A). The total wetland acreage delineated in 2021 was 39.5 acres, representing a decrease of 0.24 acres since 2020. The wetland boundary contracted minimally near the northwest boundary of the site between Cells 1 and 7. Between 2020 and 2021 monitoring events, this area exhibited an increase in cover of upland plant species and no evidence of hydrology or hydric soil indicators.

In 2020, the USACE (N. Green, personal communication, May 6, 2020) provided guidance on open water, defining it as "areas of open water of any depth with less than 5% rooted emergent vegetation, no vegetation, submerged non-rooted vegetation, and/or submerged vegetation rooted in the substrate that does not extend above the water surface." In accordance with this recent USACE guidance, open water accounted for 6.63 acres of the mitigation site in 2021. Beaver activity, observed at the outlet of Schrieber Lake from 2019 through 2021, has not been observed at Schrieber Meadows, but it is contributing to a shift in wetland development at both sites. The two- to three-year-old beaver dam constructed at the outlet of Schrieber Lake has created perennial inundation levels across the southern two-thirds of the Schrieber Meadows site from 2019 through 2021. The active beaver dam has changed the site's hydrologic regime, resulting in an expansion of perennial deep-water inundation levels observed within wetland vegetation community type 3 in 2021. Notable shifts in species cover and dominance were observed in this wetland community and are expected to continue as open water habitat persists perennially across the site.

The stream channel represented 0.34 acres in 2021 while uplands accounted for the remaining 10.48 acres of the mitigation site.

| Habitat Type | 2019 Acreage | 2020 Acreage | 2021 Acreage |
|------------------------|-----------------|-----------------|-----------------|
| Wetland ^(a) | 47.08 | 39.74 | 39.50 |
| Stream Channel | 0.34 | 0.34 | 0.34 |
| Open Water | N/A | 7.44 | 6.63 |
| Total Wetland & WUS(b) | 47.42 | 47.52 | 46.47 |

Table 2. Wetland & Waters of the U.S. (WUS) Acreage Delineated From 2019 Through 2021

Vegetation – A total of 140 plant species have been identified at the site from 2010 through 2021 (Appendix B), including four new native species in 2021. Three upland and four wetland community types (CT) were identified and mapped at the site in 2021 (Figure A-3, Appendix A). Vegetation communities were identified by species composition and dominance. The community composition for each CT is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and community boundaries shown on Figure A-3 (Appendix A).

The vegetation CTs identified on site in 2021 include the following:

- Upland Type 8 Elymus repens/Pascopyrum smithii
- Upland Type 9 *Alopecurus* spp./*Bromus inermis*
- Upland Type 14 Agrostis capillaris/Phleum pratense
- Wetland Type 3 Phalaris arundinacea
- Wetland / Open Water Type 5 Aquatic Macrophytes/Open Water
- Wetland Type 6 Alopecurus pratensis/Agrostis capillaris
- Wetland Type 15 Typha latifolia/Eleocharis palustris

A notable beneficial shift in species cover and dominance, due to the active beaver dam and perennial surface water, was observed within wetland CT 3 – *Phalaris arundinacea*. In 2021, inundation levels within wetland CT 3 were lower than observed in 2020, with an average of 2-2.5 feet. While the water depth was slightly lower, perennial surface water increased in cover within this CT since 2020, especially around Coyote Creek, the ditch adjacent to Highway 2, and between the excavated depressions. The

⁽a) Wetland acreage includes approximately 8.30 acres of riparian stream buffer

⁽b) Waters of the U.S. (WUS)

seven-foot-tall aggressive reed canary grass (RCG) still dominates the CT, but large patches of the dense monoculture were absent, observed as dead, dying, or as floating mats. There was an increase in cover by *Carex* spp., bluejoint (*Calamagrostis canadensis*), and perennial surface water observed in areas once dominated by RCG. These shifts in cover by RCG, *Carex* spp., bluejoint, and perennial surface water are a result of more than two years of deep perennial inundation. Numerous scientific studies have evaluated and reported extended periods of flooding as a control strategy for invasive monocultures of RCG, especially flooding during summer when maximum rhizome growth and tillering occur. These studies reported consistent decreases in cover by RCG, seed germination at 0 to 10%, and large reductions in rhizome growth and tiller production, when perennial inundation and flooded conditions were greater than one year (Jenkins et al 2008; WRCGM 2009; Waggy 2010). The beaver activity and subsequent perennial inundation observed over the last few years at Schrieber Lake and Meadows is successfully killing RCG rhizomes, decreasing its viable seed bank and germination, and promoting an increase in native herbaceous hydrophytic species richness and cover within wetland CT 3.

Vegetation cover was measured along three belt transects (T-1, T-2, and T-3) in 2021 (Figure A-2, Appendix A). Photographs of the transect end points are provided in Appendix C. Table 3 summarizes the data for T-1 from 2010 and 2019 through 2021. T-1 is 318 feet long and intersects CT 3 – *Phalaris arundinacea* and 5 – Aquatic Macrophytes/Open Water. Wetland CT 3 and open water CT 5 accounted for 34.3 and 65.7 percent of the transect, respectively, in both 2020 and 2021. In 2021, CT 5 – Aquatic Macrophytes/Open Water met the recent USACE definition of open water. This transect has not intersected an upland CT since 2010.

Table 3. Data Summary for T-1 From 2010 and 2019 Through 2021 at the Schrieber Meadows Site

| Monitoring Year | 2010 | 2019 | 2020 | 2021 |
|--|------|------|------|------|
| Transect Length (feet) | 318 | 318 | 318 | 318 |
| Vegetation Community Transitions Along Transect | 7 | 6 | 6 | 6 |
| Vegetation Communities Along Transect | 3 | 2 | 2 | 2 |
| Hydrophytic Vegetation Communities Along Transect | 2 | 2 | 1 | 1 |
| Total Vegetative Species | 32 | 9 | 10 | 7 |
| Total Hydrophytic Species | 22 | 9 | 10 | 7 |
| Total Upland Species | 10 | 0 | 0 | 0 |
| Estimated % Total Vegetative Cover | 75 | 75 | 45 | 45 |
| Estimated % Unvegetated | 25 | 25 | 55 | 55 |
| % Transect Length Comprising Hydrophytic Vegetation Communities | 62 | 19.8 | 34.3 | 34.3 |
| % Transect Length Comprising Upland Vegetation Communities | 13 | 0 | 0 | 0 |
| % Transect Length Comprising Open Water With Aquatic Macrophytes | 25 | 80.2 | 65.7 | 65.7 |

Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 4. T-2 is 594 feet long and alternates between wetland CT 3 – *Phalaris arundinacea*, 6 – *Alopecurus pratensis/Agrostis capillaris*, 14 – *Agrostis capillaris/Phleum pratense*, and 15 – *Typha latifolia/Eleocharis palustris*. In 2020 and 2021, hydrophytic vegetation communities comprised 100 percent of the transect, which is an increase of 40 percent since 2019. A total of 33 species were identified in 2021, including 30 hydrophytes and 3 upland species. The total number of hydrophytic plant species observed along the transect increased by 6 in 2021, following a minimal decrease reported in 2020. Total vegetative cover was estimated at 65 percent, consistent with that observed in 2020.

Table 4. Data Summary for T-2 From 2012 and 2019 Through 2021 at the Schrieber Meadows Site

| Monitoring Year | 2012 | 2019 | 2020 | 2021 |
|--|------|------|------|------|
| Transect Length (feet) | 594 | 594 | 594 | 594 |
| Vegetation Community Transitions Along Transect | 16 | 15 | 8 | 8 |
| Vegetation Communities Along Transect | 3 | 4 | 4 | 4 |
| Hydrophytic Vegetation Communities Along Transect | 3 | 3 | 4 | 4 |
| Total Vegetative Species | 23 | 35 | 29 | 33 |
| Total Hydrophytic Species | 17 | 30 | 24 | 30 |
| Total Upland Species | 9 | 5 | 5 | 3 |
| Estimated % Total Vegetative Cover | 60 | 70 | 65 | 65 |
| Estimated % Unvegetated | 40 | 30 | 35 | 35 |
| % Transect Length Comprising Hydrophytic Vegetation Communities | 59.1 | 60 | 100 | 100 |
| % Transect Length Comprising Upland Vegetation Communities | 0 | 0 | 0 | 0 |
| % Transect Length Comprising Open Water With Aquatic Macrophytes | 40.9 | 23 | 0 | 0 |
| % Transect Length Comprising Mudflat | 0 | 17 | 0 | 0 |

T-3 begins near constructed wetland Cell 8 along the Middle Coyote Creek reach and extends east 440 feet to the edge of the former Coyote Creek channel along the eastern site boundary. The data recorded on T-3 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 5. The transect intervals alternated between wetland CT 3 – *Phalaris arundinacea* and 5 – Aquatic macrophytes/Open Water. Wetland CT 3 and open water CT 5 accounted for 52.5 and 47.5 percent of the transect, respectively, in 2021. The minimal increase in open water and decrease in total species observed along this transect, from 2020 to 2021, corresponds with the observation of large patches of RCG as dead, dying, or as floating mats. In 2021, CT 5 – Aquatic Macrophytes/Open Water met the recent USACE definition of open water.

Table 5. Data Summary for T-3 From 2012 and 2019 Through 2021 at the Schrieber Meadows Site

| Monitoring Year | 2012 | 2019 | 2020 | 2021 |
|--|------|------|------|------|
| Transect Length (feet) | 440 | 440 | 440 | 440 |
| Vegetation Community Transitions Along Transect | 4 | 4 | 4 | 4 |
| Vegetation Communities Along Transect | 2 | 2 | 2 | 2 |
| Hydrophytic Vegetation Communities Along Transect | 2 | 2 | 2 | 2 |
| Total Vegetative Species | 9 | 13 | 13 | 9 |
| Total Hydrophytic Species | 7 | 9 | 13 | 9 |
| Total Upland Species | 2 | 4 | 0 | 0 |
| Estimated % Total Vegetative Cover | 50 | 75 | 50 | 50 |
| Estimated % Unvegetated | 50 | 25 | 50 | 50 |
| % Transect Length Comprising Hydrophytic Vegetation Communities | 53 | 48 | 53.4 | 52.5 |
| % Transect Length Comprising Upland Vegetation Communities | 0 | 0 | 0 | 0 |
| % Transect Length Comprising Open Water With Aquatic Macrophytes | 47 | 52 | 46.6 | 47.5 |

During the July 2021 monitoring event, 19 occurrences of Priority 2B noxious weed species were mapped at the site, including Canada thistle (*Cirsium arvense*), houndstongue (*Cynoglossum officinale*), and ox-eye daisy (*Leucanthemum vulgare*). One occurrence of orange hawkweed (*Hieracium*

aurantiacum), a Priority 2A noxious weed in Montana, was also mapped. Noxious weed infestations occurred in areas less than 0.1-acre in size and were present in both wetland and upland habitat (Figure A-3, Appendix A). The infestations of Canada thistle included trace (<1%), low (1-5%), moderate (6-25%) and high (>25%) cover classes, and primarily occurred north of the access road. Two patches of ox-eye daisy were observed at trace and low cover classes, while houndstongue and orange hawkweed each occurred as trace patches. Overall noxious weed cover across the site was estimated below 5% cover in 2021. Annual weed spraying efforts have been effective in reducing infestation size and cover of noxious weed populations across the site to meet the success criteria outlined in the performance standards. The Montana Department of Transportation (MDT) has an ongoing weed-control program, which included weed spraying by contractors on June 30-July 1, 2021, prior to the July 2021 monitoring event.

A total of 1,000 speckled alders (*Alnus incana*) and 750 willows (*Salix* spp.) were planted along the newly constructed stream channel and wetland cells in the northern third of the site. In 2021, a total of 37 live plants were observed across the mitigation site, indicating approximately 2 percent survival. There were no willow (*Salix* spp.) plantings observed during the 2021 monitoring event. The 37 surviving speckled alder plantings appeared stunted and had poor vigor due to aggressive competition from reed canary grass and perennial deep-water conditions. Balsam poplar (*Populus balsamifera*) volunteers were observed growing around the edges of some excavated wetland cells in the project area north of the access road, along with speckled alder and one Bebb's willow (*Salix bebbiana*) volunteer. Minimal shrub development at the site is expected due to the persistence of RCG, a high-water table, perennial surface water, and browse by ungulates.

Hydrology – During the 2021 investigation, the average depth of surface water across the site was estimated at 1.5 feet with a range of depths from 0 to 5 feet. Approximately 70 percent of the project area was inundated during the 2021 site visit. The deepest standing water is located within excavated cells south of the access road, within Coyote Creek, and the former Coyote Creek channel along the east project boundary. The surface-water depth at the emergent vegetation and open-water boundary was estimated at 2 feet, a decrease of 0.5 feet compared to 2020. The southern two-thirds of the site was inundated and/or saturated as a result of the reconstructed Coyote Creek channel, abundant surfacewater from beaver activity, and groundwater flowing through the valley. The high surface water elevations observed on site are a result of restoration efforts to plug existing drain ditches and channels, the subsidence of histosol soil elevations over time, and the beaver dam located at the outlet of Schrieber Lake just south of this site. The area north of the access road was drier than the southern portion of the site, with notably less surface water than observed in 2020. All excavated wetland cells contained surface water or were saturated to the soil surface. The intermittent Coyote Creek channel was dry in July 2021, typical for this location, above the Coyote Creek spring, just upstream of the site's access road. The spring provides the primary perennial source of hydrology to Coyote Creek downstream of this location. Direct precipitation also contributes to wetland hydrology, but the high groundwater table is the primary source of water across the site. Precipitation accumulation for this area in 2021 reported 13.27 inches from January through October, which is higher than the accumulation reported for the same period in 2020 (11.92 inches), much lower than that reported for the same period in 2019 (16.62 inches), and nearly equivalent with the historic average of 13.30 inches [NRCS, 2021a].

Soils – Soil test pits were excavated at four locations to evaluate the extent of hydric soil development across the site in 2021 (Appendices A and B). Soil textures within wetland test pits ranged from peat (i.e., organic) to silty clay. Hydric soil indicators were observed in both wetland test pits and included histic epipedon, hydrogen sulfide, and depleted matrix. Soil textures within upland test pits included silty clay loam. No hydric soil indicators were observed in either of the upland test pits. Additional field observations for the four data points are provided in the wetland determination data forms in Appendix B.

Photographs – Ten photo points were established within the pilot project that included three constructed cells, initially monitored in 2010. A total of 20 photo points were established in 2012 in response to the increased project area scope and size, including the reestablishment of photo point 7 from its original 2010 location. In addition to established photo points, photographs were taken at each surveyed stream cross section, sampled data points, and vegetation transect endpoints. The locations of these photographs are illustrated on Figure A-2 (Appendix A) and the photographs in Appendix C. Please refer to previous years' monitoring reports for all previous annual photographs (https://www.mdt.mt.gov/publications/brochures/wetland_mitigation.shtml).

Functional Assessment – The 2008 MDT Montana Wetland Assessment Method (MWAM) functional assessment results for 2021 are summarized in Table 6. Three separate Assessment Areas (Aas) were used to evaluate the site: Creation AA, Enhancement AA, and Restoration AA. Completed functional assessment forms for all three Aas are provided in Appendix B. All wetlands within the Schrieber Meadows site rate as Category I wetlands. Functional scores and ratings have remained nearly constant since 2015. All Aas received high or exceptional ratings for many assessment parameters, including Listed/Proposed Threatened & Endangered Species Habitat due to the documentation of grizzly bears on the site in recent years. Other functions rated as high and/or exceptional include General Wildlife Habitat, Short- and Long-Term Surface-Water Storage, Sediment/Nutrient/Toxicant Removal, Sediment/Shoreline Stabilization, Production Export/Food Chain Support, and Groundwater Discharge/Recharge.

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

| Function and Value Parameters From the 2008 Montana Wetland Assessment Method | 2021 Enhancement AA | 2021 Creation AA | 2021 Restoration AA |
|---|------------------------|---------------------|------------------------|
| Listed/Proposed Threatened & Endangered (T&E) Species Habitat | High (0.8) | High (0.8) | High (0.8) |
| Montana Natural Heritage Program Species (MTNHP) Habitat | High (0.9) | High (0.9) | High (0.9) |
| General Wildlife Habitat | Exc (1.0) | Exc (1.0) | Exc (1.0) |
| General Fish/Aquatic Habitat | Low (0.3) | Mod (0.6) | NA |
| Flood Attenuation | Mod (0.6) | Mod (0.6) | Mod (0.5) |
| Short- and Long-Term, Surface-Water Storage | High (1.0) | High (1.0) | High (0.8) |
| Sediment/Nutrient/Toxicant Removal | High (1.0) | High (1.0) | Mod (0.6) |
| Sediment/Shoreline Stabilization | High (1.0) | High (1.0) | High (1.0) |
| Production Export/Food Chain Support | High (0.9) | Excel (1.0) | Exc (1.0) |
| Groundwater Discharge/Recharge | High (1.0) | High (1.0) | High (1.0) |
| Uniqueness | Mod (0.4) | Mod (0.4) | Mod (0.4) |
| Recreation/Education Potential (bonus points) | High (0.2) | High (0.2) | High (0.2) |
| Actual Points/Possible Points | 9.1/10 | 9.5/11 | 8.2/10 |
| % of Possible Score Achieved | 91% | 86% | 82% |
| Overall Category | I | I | 1 |
| Total Acreage of Assessed Wetlands Within Site Boundaries | 13.22 | 22.48 | 3.46 |
| Functional Units (acreage × actual points) | 120.30 | 213.57 | 28.37 |

Wildlife – Fifteen bird species were identified in 2021. The two bird boxes installed at the site are functional, although neither were in use during the 2021 site visit. In addition to the fifteen bird species, Columbia spotted frogs (*Rana luteiventris*) were also observed within many of the excavated wetland

cells, as well as one garter snake (*Thamnophis sirtalis*), and two shells of painted turtles (*Chrysemys picta*). Mammal observations at the site included four Columbian ground squirrels (*Urocitellus columbianus*), two yellow-bellied marmots (*Marmota flaviventris*) and one white-tailed deer (*Odocoileus virginianus*) (see Mitigation Monitoring form in Appendix B).

Stream Monitoring – The survey results for 11 permanent cross sections established along the constructed Coyote Creek (Figure A-2, Appendix A) are shown in Appendix D. The 2021 data was compared to the previous surveys and discussions to assess stream channel stability. In general, the banks of the constructed channel were well-vegetated and exhibited stable conditions. Consequently, no major channel morphological changes have been observed throughout any of the monitoring years.

Credit Summary - Stream Credits

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

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

| Factors | Upper Coyote Creek (USFS) | Coyote Creek Spring Area | Middle Coyote Creek (MDT) | Perennial Spring Channel | Lower Coyote Creek | | |
|--|------------------------------------|-----------------------------------|------------------------------------|--------------------------------|--------------------------|--|--|
| Net Improvement | 2.50 | 0.00 | 2.50 | 2.50 | 2.50 | | |
| Stream Status | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | | |
| Type of Protection | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | | |
| Mitigation Timing | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | | |
| Comparative Stream Order | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | | |
| Location | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | | |
| Sum of Factors (M) | 3.15 | 0.65 | 3.15 | 3.15 | 3.15 | | |
| Linear Feet (L) | 1,752 | 190 | 3,179 | 400 | 2,425 | | |
| Total Stream Credits (M × L) | 5,519 | 123 | 10,014 | 1,260 | 7,639 | | |
| Total Stream Credits ^(a) = 24,555 | | | | | | | |
| Total Mitigation Credits (Riparian | + Stream) = 10,9 | 96 + 24,555 = | 35,551 | | | | |

⁽a) Credits were calculated using the Montana Stream Mitigation Procedure [USACE, 2010].

Credit Summary – Wetland Credits

The pilot project, constructed in 2007, generated approximately 3.72 mitigation credit acres, including 2.38 credit acres of wetland creation, 0.75 credit acre for restoration (rehabilitation) of existing wetlands (1.12 acres restored), and 0.59 credit acre of upland buffer (2.96 acres maintained) around the wetlands. The pilot project was integrated into the larger Schrieber Meadows mitigation project constructed in 2011. Table 8 provides the credits generated at the Schrieber Meadows site for the approximately 57-acre, full-scale project and does not differentiate between the pilot and the larger Schrieber Meadows mitigation project.

A total of 39.50 acres of wetland habitat were delineated at the Schrieber Meadows site in 2021, including 18.53 acres of creation, 3.46 acres of restoration, 9.34 acres of enhancement, and 8.3 acres of riparian buffer (Table 8). A total of 58.57 acres, including 12.39 acres of upland buffer, -0.08-acre project impacts, and 6.63 acres of open water, were used to calculate the mitigation credit acres. In accordance

with the USACE-approved performance standard for this site, open water areas with submerged and/or floating vegetation will be considered successful and creditable. The open water areas at the site are considered successful and creditable as they exhibited less than 5% emergent vegetation and a diversity of submerged and floating aquatic macrophytes. After applying the USACE-approved ratios to these values, a total of 26.35 mitigation credit acres have been estimated in 2021, which is 9.11 credit acres more than the targeted 17.24 credit acres originally planned for this site. The decrease in total mitigation acreage in 2020 (26.93 credit acres) and 2021 (26.35 credit acres) as compared to 2019 (31.01 credit acres) is the result of the recent change for open water habitat at the request of the USACE.

Table 8. Summary of Wetland Mitigation Credits at the Schrieber Meadows Site from 2013 and 2019 through 2021

| Mitigation Type | Total Proposed Acreage | Ratio | Proposed Credit Acres | 2013 Delineated Acreage | 2013 Credit Acres | 2019 Delineated Acreage | 2019 Credit Acres | 2020 Delineated Acreage | 2020 Credit Acres | 2021 Delineated Acreage | 2021 Credit Acres |
|---|------------------------------|--------------------|-----------------------------|-------------------------------|-------------------------|-------------------------------|-------------------------|-------------------------------|-------------------------|-------------------------------|-------------------------|
| Creation – USFS/MDT Property | 8.91 | 1:1 | 8.91 | 22.43 | 22.43 | 21.9 | 21.9 | 19.11 | 19.11 | 18.53 | 18.53 |
| Restoration on USFS/MDT Property | 3.46 | 1.5:1 | 2.31 | 3.46 | 2.31 | 3.46 | 2.31 | 3.46 | 2.31 | 3.46 | 2.31 |
| Enhancement of Wetlands Inside Geotechnical Limits Adjacent to US Highway 2 (MDT/USFS) | 13.22 | 3:1 | 4.41 | 13.22 | 4.41 | 13.22 | 4.41 | 9.34 | 3.11 | 9.34 | 3.11 |
| Riparian Buffer ^(a) | | _ | | 8.3 | (b) | 8.3 | (b) | 8.3 | (b) | 8.3 | (b) |
| Upland Buffer | 8.5 | 5:1 | 1.7 | 12.39 [©] | 2.48 |
| Project Impacts | -0.08 | None | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 |
| Open Water | N/A | TBD ^(d) | N/A | | | | | 7.44 | TBD ^(d) | 6.63 | TBD ^(d) |
| Total Mitigation Acreage | 34.01 | | 17.24 | 59.72 | 31.54 | 59.19 | 31.01 | 59.96 | 26.93 | 58.57 | 26.35 |

⁽a) Riparian buffer areas were used to calculate stream and riparian credits.

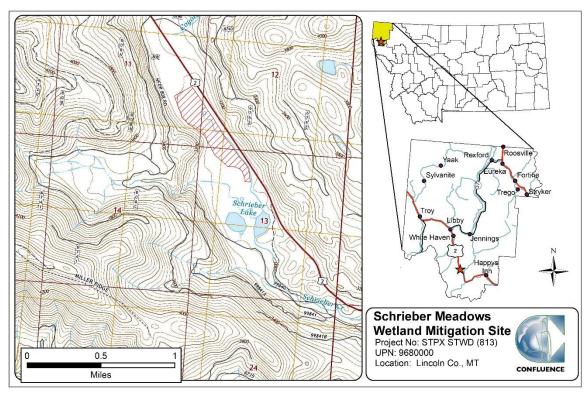
⁽b) Wetland acreages within riparian buffer were subtracted from wetland credit total; riparian buffer does not include upland buffer acreage.

[©] Acreage includes 50-foot buffer around wetlands within MDT and USFS property and outside of the riparian buffer.

⁽d) Mitigation ratios and crediting for Open Water are To Be Determined (TBD) – see USACE approved performance standard for Open Water (Table 1).

Maps, Plans, Photos

Figure 1. Site Location Map



Project Area Maps/Figures: See Appendix A (Figure A-2 – 2021 Monitoring Activity Locations; Figure A-3 – 2021 Mapped Site Features; Figure A-4 – 2021 Wetland Delineation)

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

Photos: See Appendix C

Plans: See Appendix D of 2012 Monitoring Report

https://www.mdt.mt.gov/otherwebdata/external/planning/wetlands/2012/schrieber_meadows_final_2_012.pdf

Conclusions

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

- 1. Riparian Buffer Success: Woody and riparian vegetation is established.
 - a. Woody vegetation along the reconstructed stream channels has been slow to develop due to perennial deep-water conditions and aggressive competition from RCG.
- 2. Planted trees and shrubs will be considered successful when they exhibit 50 percent survival after 5 years.
 - a. Woody plant survival is not expected to meet this performance standard.

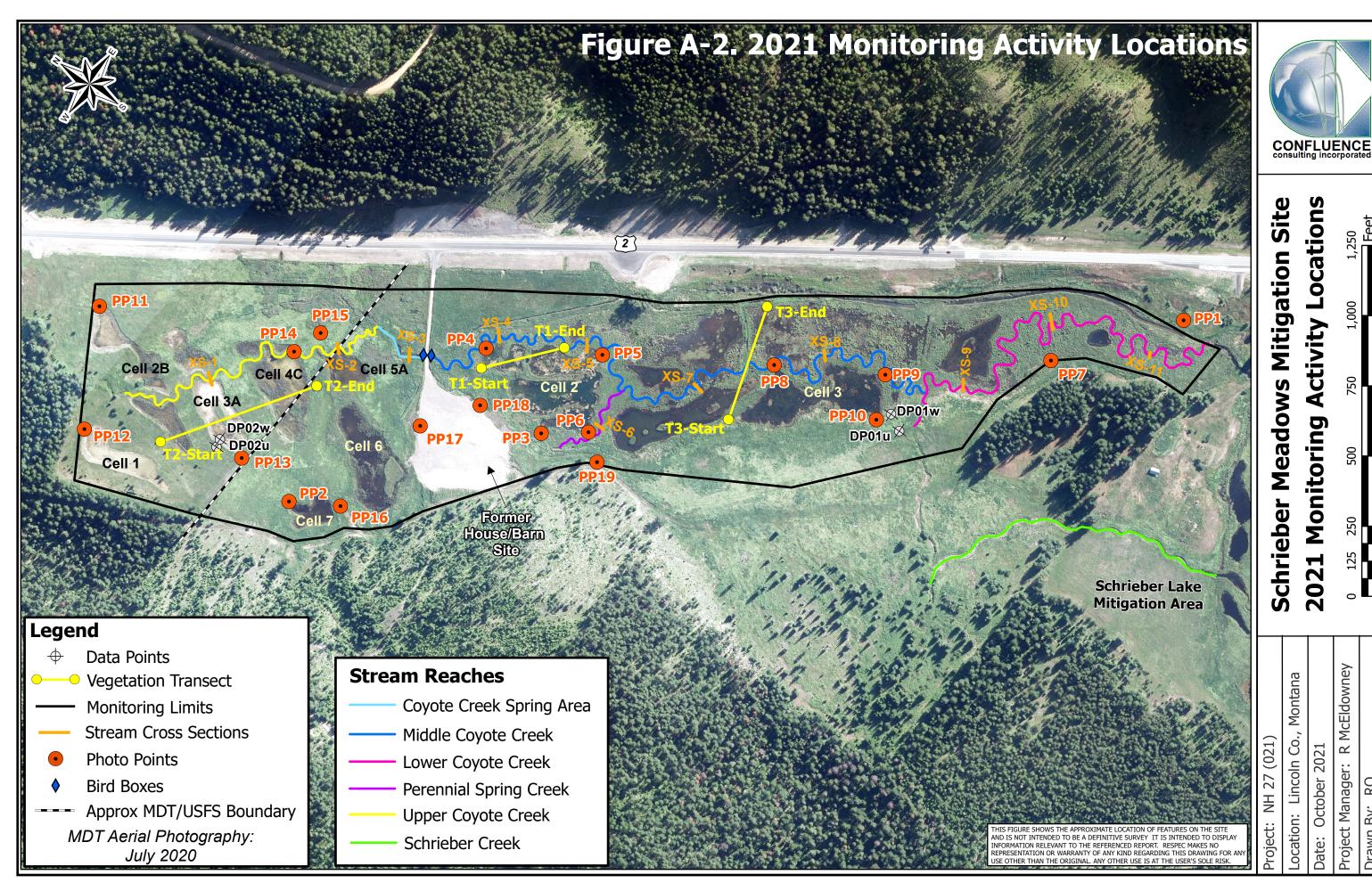
References

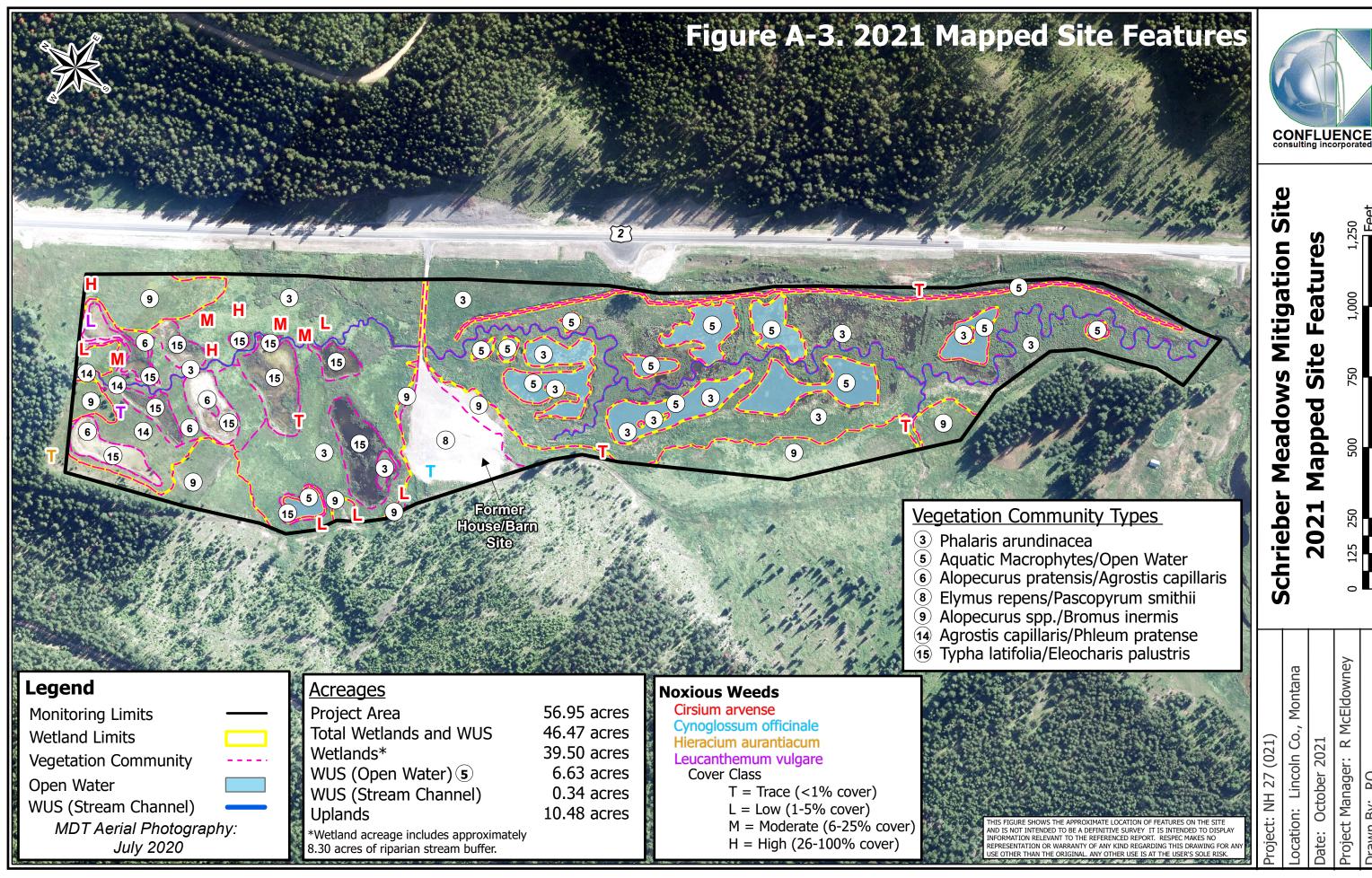
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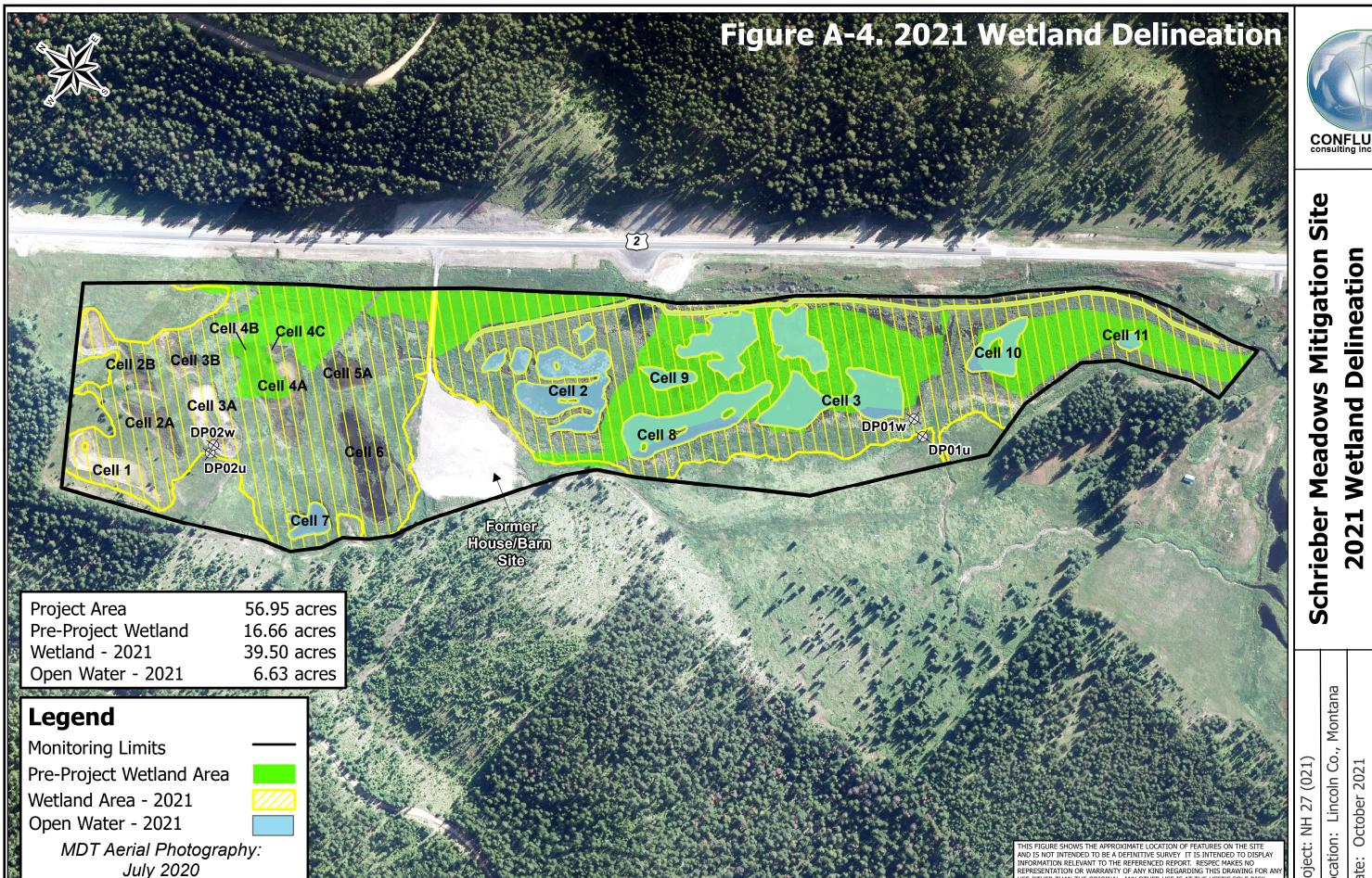
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APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring Schrieber Meadows Lincoln County, Montana







APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Schrieber Meadows Lincoln County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

| Project Site: Schrieber MeadowsAssessment Date/Time | <u>7/15/2</u> 021 |
|---|-------------------|
| Person(s) conducting the assessment: R Quire, S Weyant, B Trudgeon | _ |
| Weather: 80 degrees, sunny, clear Location: Highway 2, Swamp Creek East | |
| MDT District: Missoula Milepost: 53.5 | |
| Legal Description: T_27N_R30W_Section(s)_11, 12, 13 | |
| Initial Evaluation Date: 8/29/2010 Monitoring Year: 11_#Visits in Year: 1 | |
| Size of Evaluation Area: 57 (acres) | |
| Land use surrounding wetland: US Highway 2, US Forest Service, forested watershed | |
| HYDROLOGY | |
| Surface Water Source: Coyote Creek spring, Precipitation, Groundwater | |
| Inundation: Average Depth: 1.5 (ft) Range of Depths: 0-5 (ft) | |
| Percent of assessment area under inundation:70 % | |
| Depth at emergent vegetation-open water boundary: 2 (ft) | |
| | lo |
| Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc <u>:</u> | |
| Surface water, saturation, high water table, hydrogen sulfide odor, iron deposits, geomorphic position, FAC neutral test, inundation visible on aerials. | |
| Groundwater Menitering Welle | |
| Groundwater Monitoring Wells | |
| Record depth of water surface below ground surface, in feet. | |
| | |
| Additional Activities Checklist: | |
| ☑ Map emergent vegetation-open water boundary on aerial photograph. | |
| Observe extent of surface water during each site visit and look for evidence of past surface water | |
| elevations (drift lines, erosion, vegetation staining, etc.) | |
| Use GPS to survey groundwater monitoring well locations, if present. | |
| Hydrology Notes: | |
| Water depths were ~0.5-1ft lower on average across most of the site as compared to 2020. Co Creek and the ditch along the eastern boundary had water depths of at least 5 feet in some ar Excavated depressions and surrounding area in the southern 2/3 of the site had water depths canging from 2-3ft, while those in the northern 1/3 of the site had depths ranging from 0 to 1.5 | eas. |

VEGETATION COMMUNITIES

Site Schrieber Meadows

(Cover Class Codes 0 = < 1%, 1 = 1.5%, 2 = 6.10%, 3 = 11.20%, 4 = 21.50%, 5 = >50%)

Community # 3 Community Type: Phalaris arundinacea / Acres: 30.69

| Species | Cover class | Species | Cover class |
|-------------------------|-------------|-------------------------|-------------|
| Alnus incana | 0 | Alopecurus arundinaceus | 1 |
| lopecurus pratensis | 1 | Bare Ground | 0 |
| alamagrostis canadensis | 1 | Carex athrostachya | 1 |
| arex nebrascensis | 1 | Carex stipata | 1 |
| arex utriculata | 1 | Cirsium arvense | 1 |
| eocharis palustris | 1 | Epilobium brachycarpum | 0 |
| oilobium ciliatum | 1 | Glyceria grandis | 0 |
| emna minor | 1 | Mimulus guttatus | 1 |
| pen Water | 4 | Persicaria amphibia | 1 |
| nalaris arundinacea | 5 | Scirpus microcarpus | 1 |

Comments:

Dominant wetland community type observed across the site. In 2021, inundation levels within this CT were lower than observed in 2020, with an average of 2-2.5 feet. While the water depth was lower, open water areas have increased within this CT since 2020, especially around Coyote Creek, the ditch along the eastern project boundary, and between the excavated depressions in southern 2/3 of the site. 7ft tall reed canary grass still dominates the CT, but large patches of the dense monoculture were absent, observed as dead, dying, or as floating mats. Increase in cover by Carex spp. and open water observed in areas once dominated by reed canary grass. These shifts in cover by reed canary grass, Carex spp., and perennial surface water are likely a result of more than 2 years of deep perennial inundation. Numerous scientific studies have evaluated and reported extended periods of flooding as a control strategy for reed canary grass, especially flooding during summer when maximum rhizome growth and tillering occur. These studies reported consistent decreases in cover by reed canary grass, seed germination at 0 to 10%, and large reductions in rhizome growth and tiller production, when perennial inundation and flooded conditions were greater than one year. In 2021, reed canary grass had also been heavily grazed in many areas by Canada geese and we suspect moose. Difficult to move through this CT.

| Community # | <u>5</u> | Community Type: | Aquatic macrophytes / Open Water | Acres: | <u>6.63</u> |
|-------------|----------|-----------------|----------------------------------|--------|-------------|
|-------------|----------|-----------------|----------------------------------|--------|-------------|

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

Comments:

Areas dominated by an average of 2-3 feet of standing water, less than 5% emergent wetland vegetation, and a diversity of submergent/floating aquatic macrophytes. Open water acreage decreased within the northern 1/3 of the site in 2021.

| Community # | 6 | Community Type: | Alopecurus pratensis / Agrostis capillaris | Acres: | 1.87 |
|-------------|---|-----------------|--|--------|------|
| | | | | | |

| Species | Cover class | Species | Cover class |
|-------------------------|-------------|----------------------------|-------------|
| Achillea millefolium | 1 | Agrostis capillaris | 4 |
| Agrostis stolonifera | 0 | Alnus incana | 0 |
| Alopecurus arundinaceus | 2 | Alopecurus pratensis | 4 |
| Bare Ground | 2 | Bromus inermis | 2 |
| Carex athrostachya | 1 | Carex lasiocarpa | 0 |
| Carex pellita | 1 | Carex utriculata | 0 |
| Eleocharis palustris | 1 | Epilobium ciliatum | 1 |
| Juncus confusus | 1 | Juncus tenuis | 1 |
| Leucanthemum vulgare | 1 | Penstemon confertus | 1 |
| Phalaris arundinacea | 2 | Phleum pratense | 1 |
| Poa pratensis | 1 | Potentilla gracilis | 0 |
| Rosa woodsii | 0 | Salix bebbiana | 0 |
| Salix bebbiana | 1 | Symphyotrichum spathulatun | n 1 |
| Commonts: | | | |

Comments:

Wetland CT northwest of access road that bisects the property.

Community # 8 Community Type: Elymus repens / Pascopyrum smithii Acres: 2.72

| Species | Cover class | Species | Cover class |
|----------------------|-------------|-----------------------|-------------|
| Alopecurus pratensis | 1 | Bare Ground | 5 |
| Bromus briziformis | 1 | Bromus inermis | 1 |
| Bromus tectorum | 2 | Descurainia pinnata | 1 |
| Elymus repens | 3 | Medicago lupulina | 2 |
| Pascopyrum smithii | 3 | Sisymbrium altissimum | 1 |
| Verbascum thapsus | 1 | | |

Comments:

Upland community type that runs along the access road that bisects the property. Composed of high bare ground and non-native weedy species, with the exception of Pascopyrum smithii.

Community # 9 Community Type: Alopecurus spp. / Bromus inermis Acres: 8.11

| Species | Cover class | Species | Cover class |
|-------------------------|-------------|------------------------|-------------|
| Achillea millefolium | 1 | Agrostis capillaris | 1 |
| Alopecurus arundinaceus | 2 | Alopecurus pratensis | 4 |
| Arnica chamissonis | 1 | Bare Ground | 2 |
| Bromus inermis | 3 | Cirsium arvense | 1 |
| Elymus repens | 2 | Pascopyrum smithii | 1 |
| Phalaris arundinacea | 2 | Phleum pratense | 1 |
| Poa pratensis | 1 | Senecio hydrophiloides | 1 |
| Taraxacum officinale | 1 | | |

Comments:

Upland community type located along the outer edges of the project area, primarily along the W-SW boundary. In 2021, this CT acreage expanded, replacing a portion of wetland CT 14. This area exhibited decrease in wetland acreage and shift from a dominance of Agrostis capillaris/Phleum pratense to a dominance of Alopecurus spp/Bromus inermis.

Community # 14 Community Type: Agrostis capillaris / Phleum pratense Acres: 1.38

| Species | Cover class | Species | Cover class | |
|-----------------------|-------------|----------------------------|-------------|--|
| Opecies | OOVEI CIUSS | Opecies | Oover class | |
| Achillea millefolium | 1 | Agrostis capillaris | 4 | |
| Agrostis stolonifera | 1 | Alopecurus pratensis | 1 | |
| Bare Ground | 2 | Bromus inermis | 3 | |
| Cirsium arvense | 0 | Fragaria virginiana | 0 | |
| Hieracium aurantiacum | 0 | Juncus confusus | 1 | |
| Juncus tenuis | 1 | Leucanthemum vulgare | 1 | |
| Phleum pratense | 3 | Pinus contorta | 0 | |
| Pinus ponderosa | 0 | Pseudotsuga menziesii | 0 | |
| Rosa woodsii | 0 | Symphyotrichum spathulatun | n 0 | |
| _ | | | | |

Comments:

Wetland community type located in northwest corner of site. In 2021, this area was drier than previous years. Species composition and cover had shifted in some areas to include more cover by upland species such as Bromus inermis. Wetland acreage decreased within this CT in 2021.

Community # 15 Community Type: Typha latifolia / Eleocharis palustris Acres: 5.29

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

Comments:

New wetland community type in 2020, replaced CT 13 and portions of CT 5 as a result of an increase in Typha latifolia. Located northwest of access road that bisects the property in excavated depressions. In 2021, less open water was observed and surface water depths were lower than 2020. Surface water depths ranged from 0-1.5 feet. Volunteer Populus balsamifera and Alnus incana seedlings observed around margins of depressions and this CT.

Total Vegetation Community Acreage

57.0

(Note: some area within the project bounds may be open water or other non-vegetative ground cover.)

VEGETATION TRANSECTS

| Schrieber Meadow | S | Da | te: | 7/15/2021 |
|----------------------|-----|-----------------|--------------------------|-------------|
| Transect Number: _1 | | _ Compass Di | irection from Start: | 112 |
| Interval Data: | | | | |
| Ending Station | 20 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Phalaris arundinacea | | 5 | | |
| Ending Station | 55 | Community Type: | Aquatic macrophytes / Op | oen Water |
| Species | | Cover class | Species | Cover class |
| Algae, green | | 4 | Alnus incana | 0 |
| Chara sp. | | 2 | Lemna minor | 2 |
| Mimulus guttatus | | 1 | Open Water | 5 |
| Persicaria amphibia | | 1 | Phalaris arundinacea | 1 |
| Ending Station | 80 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Cirsium arvense | | 1 | Mimulus guttatus | 1 |
| Open Water | | 4 | Phalaris arundinacea | 5 |
| Ending Station | 155 | Community Type: | Aquatic macrophytes / Op | oen Water |
| Species | | Cover class | Species | Cover class |
| Algae, green | | 3 | Aquatic macrophytes | 4 |
| Lemna minor | | 1 | Open Water | 5 |
| Persicaria amphibia | | 1 | | |
| Ending Station | 181 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Alnus incana | | 0 | Open Water | 3 |
| Persicaria amphibia | | 1 | Phalaris arundinacea | 5 |
| Ending Station | 280 | Community Type: | Aquatic macrophytes / Op | oen Water |
| Species | | Cover class | Species | Cover class |
| Algae, brown | | 2 | Algae, green | 1 |
| | | | | _ |
| Aquatic macrophytes | | 2 | Open Water | 5 |

| Ending Station 318 Community Type : | Phalaris arundinacea / |
|---|------------------------|
|---|------------------------|

| Species | Cover class | Species | Cover class |
|----------------------|-------------|------------|-------------|
| Glyceria grandis | 1 | Open Water | 3 |
| Phalaris arundinacea | 5 | | |

Transect Notes:

Open water covered more surface area in 2021, but depths were 0.5-1 foot lower than 2020. Reed canary grass cover has decreased in general since 2020 as a result of the 2+ years of perennial inundation. Difficult and slow to move through. Reed canary grass greater than 7ft tall, water at times greater than 3ft deep, monitoring this transect was hazardous and caution taken by crew. A kayak was necessary for the crew member completing the cross section survey.

| Interval Data: | | | | |
|-----------------------|--------------|-----------------|--------------------------------|-----------------|
| Ending Station | | Community Type: | | |
| Species | (| Cover class | Species | Cover class |
| Agrostis capillaris | | 5 | Agrostis stolonifera | 1 |
| Bare Ground | | 2 | Bromus inermis | 1 |
| Juncus confusus | | 1 | Juncus tenuis | 2 |
| Leucanthemum vulgare | | 1 | Phleum pratense | 1 |
| Ending Station | 105 (| Community Type: | Typha latifolia / Eleocharis p | alustris |
| Species | (| Cover class | Species | Cover class |
| Bare Ground | | 1 | Carex pellita | 3 |
| Carex stipata | | 1 | Eleocharis palustris | 2 |
| Glyceria grandis | | 0 | Juncus tenuis | 1 |
| Open Water | | 3 | Phalaris arundinacea | 1 |
| Scirpus microcarpus | | 1 | Typha latifolia | 4 |
| Ending Station | 168 (| Community Type: | Alopecurus pratensis / Agros | stis capillaris |
| Species | (| Cover class | Species | Cover class |
| Agrostis capillaris | | 2 | Agrostis stolonifera | 2 |
| Alopecurus pratensis | | 3 | Bromus inermis | 1 |
| Carex pellita | | 4 | Eleocharis palustris | 1 |
| Epilobium ciliatum | | 0 | Juncus tenuis | 0 |
| Phalaris arundinacea | | 1 | | |
| Ending Station | 219 (| Community Type: | Typha latifolia / Eleocharis p | alustris |
| Species | (| Cover class | Species | Cover class |
| Achillea millefolium | | 0 | Agrostis capillaris | 1 |
| Bare Ground | | 3 | Beckmannia syzigachne | 1 |
| Eleocharis palustris | | 3 | Epilobium ciliatum | 0 |
| Juncus tenuis | | 1 | Leucanthemum vulgare | 0 |
| Phalaris arundinacea | | 1 | Polypogon monspeliensis | 0 |
| Populus balsamifera | | 0 | Trifolium pratense | 1 |
| Typha latifolia | | 4 | Veronica scutellata | 2 |
| Ending Station | 250 (| Community Type: | Alopecurus pratensis / Agros | stis capillaris |
| Species | (| Cover class | Species | Cover class |
| Achillea millefolium | | 1 | Agrostis capillaris | 2 |
| Alopecurus pratensis | | 3 | Bare Ground | 2 |
| | | 4 | Penstemon confertus | 1 |
| Bromus inermis | | 4 | rensterion contentas | ı |

Transect Number: 2 Compass Direction from Start: 100

| Ending Station | 295 | Community Type: | Typha latifolia / Eleocharis p | alustris |
|-----------------------|-----|-----------------|--------------------------------|-----------------|
| Species | | Cover class | Species | Cover class |
| Agrostis capillaris | | 0 | Bare Ground | 3 |
| Beckmannia syzigachne | | 0 | Eleocharis palustris | 3 |
| Epilobium ciliatum | | 1 | Glyceria grandis | 0 |
| Juncus tenuis | | 1 | Leucanthemum vulgare | 0 |
| Phalaris arundinacea | | 1 | Populus balsamifera | 1 |
| Typha latifolia | | 4 | | |
| Ending Station | 410 | Community Type: | Alopecurus pratensis / Agro | stis capillaris |
| Species | | Cover class | Species | Cover class |
| Agrostis capillaris | | 1 | Alopecurus pratensis | 5 |
| Bare Ground | | 1 | Bromus inermis | 3 |
| Leucanthemum vulgare | | 0 | Potentilla gracilis | 1 |
| Ending Station | 555 | Community Type: | Typha latifolia / Eleocharis p | alustris |
| Species | | Cover class | Species | Cover class |
| Alnus incana | | 0 | Alopecurus pratensis | 0 |
| Carex athrostachya | | 0 | Carex bebbii | 1 |
| Carex nebrascensis | | 0 | Chara sp. | 1 |
| Eleocharis palustris | | 3 | Juncus confusus | 0 |
| Juncus nodosus | | 0 | Juncus tenuis | 1 |
| Mentha arvensis | | 0 | Open Water | 2 |
| Persicaria amphibia | | 1 | Phalaris arundinacea | 1 |
| Salix bebbiana | | 0 | Scirpus microcarpus | 1 |
| Typha latifolia | | 4 | | |
| Ending Station | 594 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Alopecurus pratensis | | 2 | Bare Ground | 1 |
| Carex athrostachya | | 0 | Carex utriculata | 0 |
| Cirsium arvense | | 1 | Phalaris arundinacea | 5 |
| Scirpus microcarpus | | 2 | | |

Transect Notes:

CT 15, a new community observed in 2020, replaced CT 5 and CT 13 along transect. In 2021, less open water was observed and depths of surface water were ~0.5-1 foot lower in excavated depressions along transect. Populus balsamifera volunteer seedlings observed growing around margins of CT 15 along transect.

| Transect Number: 3 | Compass Direction from Start: 45 | | | |
|-----------------------|----------------------------------|-----------------|--------------------------|-------------|
| Interval Data: | | | | |
| Ending Station | 60 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Lemna minor | | 1 | Open Water | 4 |
| Persicaria amphibia | | 1 | Phalaris arundinacea | 5 |
| Ending Station | 137 | Community Type: | Aquatic macrophytes / Op | en Water |
| Species | | Cover class | Species | Cover class |
| Algae, green | | 1 | Aquatic macrophytes | 3 |
| Chara sp. | | 4 | Lemna minor | 1 |
| Open Water | | 5 | Phalaris arundinacea | 1 |
| Sparganium natans | | 1 | | |
| Ending Station | 288 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Carex utriculata | | 1 | Eleocharis palustris | 0 |
| Epilobium ciliatum | | 1 | Lemna minor | 2 |
| Open Water | | 4 | Persicaria amphibia | 2 |
| Phalaris arundinacea | | 5 | | |
| Ending Station | 420 | Community Type: | Aquatic macrophytes / Op | en Water |
| Species | | Cover class | Species | Cover class |
| Algae, brown | | 3 | Carex nebrascensis | 1 |
| Carex utriculata | | 1 | Chara sp. | 2 |
| Lemna minor | | 2 | Open Water | 5 |
| Persicaria amphibia | | 1 | Phalaris arundinacea | 1 |
| Typha latifolia | | 1 | | |
| Ending Station | 440 | Community Type: | Phalaris arundinacea / | |
| Species | | Cover class | Species | Cover class |
| Epilobium ciliatum | | 1 | Lemna minor | 2 |
| Open Water | | 3 | Phalaris arundinacea | 5 |

Transect Notes:

Open water covered more surface area in 2021, but depths were 0.5-1 foot lower than 2020. End of transect adjacent to ditch along eastern boundary had water depths that were 5+ feet deep. Reed canary grass cover has decreased in general since 2020 as a result of the 2+ years of perennial inundation. Difficult and slow to move through. Reed canary grass greater than 7ft tall, water at times greater than 3ft deep along transect, therefore monitoring was hazardous and caution taken by crew. A kayak was necessary for the crew member completing the cross section survey.

PLANTED WOODY VEGETATION SURVIVAL

Schrieber Meadows

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

Comments

Planted shrubs are difficult to see at the site due to the dense cover of tall reed canary grass. It is thought that the majority of woody plantings have died because of perennial deep water conditions and aggressive competition from reed canary grass. Volunteer Populus balsamifera and Alnus incana seedlings observed around margins of excavated depressions in northern 1/3 of site. One volunteer Beb's Willow was observed in 2021.

Schrieber Meadows

WILDLIFE

Birds

| Were man-made nesting structures installed? <u>Yes</u> | | | | |
|--|----|--|--|--|
| If yes, type of structure: Bird boxes | | | | |
| How many?2 | | | | |
| Are the nesting structures being used? | No | | | |
| Do the nesting structures need repairs? | No | | | |

Nesting Structure Comments:

The observed nesting structures do not appear to be in use.

| Species | #Observed | Behavior | Habitat |
|----------------------|-----------|----------|---------|
| American Crow | 2 | FO, L | |
| American Robin | 1 | L | |
| Canada Goose | 45 | FO, L | |
| Common Nighthawk | 2 | FO | |
| Common Yellowthroat | 3 | L | |
| Eastern Kingbird | 6 | FO, L | |
| Killdeer | 2 | FO, L | |
| Mallard | 1 | L | |
| Red-winged Blackbird | 28 | FO, L | |
| Sparrow Sp. | 20 | | |
| Spotted Sandpiper | 1 | F | |
| Swainson's Thrush | 6 | L | |
| Swainson's Warbler | 2 | L | |
| Willow Flycatcher | 6 | FO, L, N | |
| Wilson's Snipe | 4 | FO, L | |
| | | | |

Bird Comments

A diversity of bird species were observed at the site in 2021.

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 | |
| Garter Snake | 1 | No | No | No | |
| Ground Squirrel | 4 | No | No | Yes | |
| Painted Turtle | 2 | No | No | No | Shells/dead. |
| White-tailed Deer | 1 | Yes | Yes | Yes | |
| Yellow-bellied Marmot | 2 | No | No | No | |

Wildlife Comments:

Observed 2 turtle shells around excavated depressions.

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:

| Ш | One photograph for e | each of the four cardinal directions surrounding the | e wetiand. |
|--------|------------------------|--|-------------------------|
| | At least one photogra | aph showing upland use surrounding the wetland. | If more than one upland |
| exists | then take additional p | hotographs. | |

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 |
|---------|-----------|-------------|---------|--------------------------|
| DP01u | 48.109522 | -115.414121 | | |
| DP01w | 48.109689 | -115.414007 | | |
| DP02u | 48.114583 | -115.420615 | | |
| DP02w | 48.114607 | -115.420497 | | |
| PP01 | 48.10804 | -115.410172 | 270 | Photo Point 1 (Pano): |
| PP02 | 48.113735 | -115.420509 | 150 | Photo Point 2: |
| PP03 | 48.112183 | -115.417503 | 90 | Photo Point 3 (Pano): |
| PP04 | 48.113213 | -115.416832 | 180 | Photo Point 4 (Pano): |
| PP05 | 48.112614 | -115.415977 | 300 | Photo Point 5 (Pano): |
| PP06 | 48.11904 | -115.417023 | 0 | Photo Point 6 (Pano): |
| PP07 | 48.108813 | -115.411923 | 0 | Photo Point 7 (Pano): |
| PP08 | 48.11121 | -115.414238 | 190 | Photo Point 8 (Pano): |
| PP09 | 48.109997 | -115.413765 | 280 | Photo Point 9 (Pano): |
| PP10 | 48.109737 | -115.414024 | 0 | Photo Point 10 (Pano): |
| PP11 | 48.116409 | -115.420021 | 190 | Photo Point 11 (Pano): |
| PP12 | 48.115673 | -115.421562 | 180 | Photo Point 12 (Pano): |
| PP13 | 48.11422 | -115.420403 | 280 | Photo Point 13 (Pano): |
| PP14 | 48.114655 | -115.41893 | 230 | Photo Point 14 (Pano): |
| PP15 | 48.114323 | -115.418449 | 180 | Photo Point 15 (Pano): |
| PP16 | 48.113403 | -115.420128 | 70 | Photo Point 16 (Pano): |
| PP17 | 48.112938 | -115.418388 | 270 | Photo Point 17 (Pano): |
| PP18 | 48.1129 | -115.417618 | 90 | Photo Point 18: |
| PP19 | 48.111553 | -115.417084 | 10 | Photo Point 19, Photo 1: |
| PP-19 | 48.111553 | -115.417084 | 100 | Photo Point 19, Photo 2: |
| PP-20 | 48.109493 | -115.413918 | 100 | Photo Point 20: |
| • | | | R-14 | |

| T-1 end | 48.112663 | -115.41642 | 295 | Transect 1 end: |
|-----------|-----------|-------------|-----|-------------------|
| T-1 start | 48.115204 | -115.417503 | 115 | Transect 1 start: |
| T-2 end | 48.114197 | -115.418991 | 280 | Transect 2 end: |
| T-2 start | 48.115204 | -115.421013 | 100 | Transect 2 start: |
| T-3 end | 48.111187 | -115.413849 | 225 | Transect 3 end: |
| T-3 start | 48.111134 | -115.415642 | 45 | Transect 3 start: |

Comments:

ADDITIONAL ITEMS CHECKLIST

| Hydrology |
|--|
| ✓ Map emergent vegetation/open water boundary on aerial photos. ✓ Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift lines, vegetation staining, erosion, etc). |
| Photos |
| One photo from the wetland toward each of the four cardinal directions One photo showing upland use surrounding the wetland. One photo showing the buffer around the wetland ✓ One photo from each end of each vegetation transect, toward the transect |
| Vegetation |
| ☑ Map vegetation community boundaries |
| ✓ Complete Vegetation Transects |
| Soils |
| ✓ Assess soils |
| Wetland Delineations |
| ☑ Delineate wetlands according to applicable USACE protocol (1987 form or Supplement) |
| ☑ Delineate wetland – upland boundary onto aerial photograph. |
| Wetland Delineation Comments |
| A total of 46.47 acres of jurisdictional wetland and waters of the US (WUS) were delineated at the Schrieber Meadows site in 2021. The total wetland acreage delineated in 2021, was 39.50 acres, which is a decrease of 0.24 acres since 2020. WUS (Open Water) was 6.63 acres in 2021, a decrease of 0.81 acres since 2020. WUS (Stream Channel) was 0.34 acres in 2021 and has remained unchanged since 2012. |
| Functional Assessments |
| ✓ Complete and attach full MDT Montana Wetland Assessment Method field forms. |
| Functional Assessment Comments: |
| All 3 AA's Category I wetlands. |

Maintenance

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

If yes, do they need to be repaired? No

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

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

into or out of the wetland? No

If yes, are the structures in need of repair?

If yes, describe the problems below.

Water level across the site is lower than 2020, but still greater than 3 feet in many areas. Reed canary grass remains very dense, over 7ft tall, making this site hazardous and caution required by field crew.

| Project/Site: Schrieber Meadows | | City/C | county: Linco | In Sampling Date:7/15/2021 | | | |
|---|-------------------|---------|----------------------------|---|--|--|--|
| Applicant/Owner: MDT | | , | | State: Montana Sampling Point: DP01u | | | |
| Investigator(s): R Quire, S Weyant | | Section | | | | | |
| Landform (hillslope, terrace, etc.): Terrace | | Local | I relief (conca | ve, convex, none): rolling Slope (%): | | | |
| Landform (hillslope, terrace, etc.): Terrace Subregion (LRR): LRR E | Lat: | | 48.109 | 522 Long: -115.414121 Datum: NAD 83 | | | |
| Soil Map Unit Name: 105: Aquic Udifluvents, poorly drai | ned, 0-5 | % slo | pes | NWI classification: Not Mapped | | | |
| Are climatic / hydrologic conditions on the site typical for this | | | | | | | |
| Are Vegetation $\underline{\hspace{1cm}}$, Soil $\underline{\hspace{1cm}}$, or Hydrology $\underline{\hspace{1cm}}$ sig | nificantly | distur | bed? A | re "Normal Circumstances" present? Yes 🔽 No 🔲 | | | |
| Are Vegetation, Soil, or Hydrology na | turally pro | oblema | atic? (| f needed, explain any answers in Remarks.) | | | |
| SUMMARY OF FINDINGS - Attach site map s | howing | j sam | npling poir | nt locations, transects, important features, etc | | | |
| | <u>v</u> | | Is the Samp within a We | oled Area tland? Yes No | | | |
| Remarks: Upland sample point, upslope of DP01w and wetland | bounda | ry. | | | | | |
| VEGETATION - Use scientific names of plant | 1 | | | | | | |
| Tree Stratum Plot size (30 Foot Radius) Absolute % Cover: | Domian Species | | ndicator | Dominance Test worksheet | | | |
| Cover. | Species | s: 3 | Status | Number of Dominant Species that are OBL, FACW or FAC: 0 (A) | | | |
| | | | | Total Number of Dominant Species Across All Strata: 1 (B) | | | |
| Sapling/Shrub Stratum Plot size (15 Foot Radius) | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B) | | | |
| , | | | | Prevalence Index worksheet | | | |
| | | | | Total % Cover of: Multiply by: OBL species 0 X 1 0 | | | |
| | | | | FACW species 0 X 2 0 | | | |
| | | | | FAC species 25 X 3 75 | | | |
| Herbaceous Stratum Plot size (5 Foot Radius) | | | | FACU species 0 X 4 0 0 UPL species 60 X 5 300 | | | |
| Alopecurus pratensis 15 | | FAG | C | | | | |
| Bromus inermis 60 | <u> </u> | UPI | | | | | |
| Elymus repens 5 | | FAG | С | Prevalence Index = B/A = 4.41176 | | | |
| Poa pratensis 5 | | FAG | C | Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation | | | |
| | | | | 2 - Dominance Test is >50% | | | |
| | | | | 3 - Prevalence Index is <= 3.0 | | | |
| | | | | 4 - Morphological Adaptations (Provide supporting data in remarks or on separate | | | |
| | | | | sheet. | | | |
| | | | | 5 - Wetland Non-Vascular Plants | | | |
| | | | | Problematic Hydrophytic Vegetation (Explain | | | |
| Woody Vine Stratum Plot size (30 Foot Radius) | | | | Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. | | | |
| Percent Bare Ground 15 | | | | Hydrophytic Vegetation Yes □ NO Present? | | | |
| Remarks: BG/litter=15%. Data point is dominated by upland ve | getation | | | Western Mountains, Valleys, and Coasts - Version 2.0 | | | |

| SOIL | | | | | | | | S | ampling Point: D | P01u |
|-------------------------|--|--------------------|------------------------------------|----------------------------------|--------------------|------------------|-----------------------|---------------|--|------------|
| Profile Desc | ription: (Descri | oe to the depth | needed to docu | ment the indi | cator or | confirm | the absence | | | |
| Depth | Matrix | | | x Features | . 1 . | 2 | | | | |
| (inches) | Color (moist) | | Color (moist) | %T | ype ¹ l | _oc ² | <u>Texture</u> | | Remarks | |
| 0-15 | 10YR 2/2 | 100 | | | | Silty | Clay Loam | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | - | | |
| | | | | | | | | - | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| ¹ Type: C=Co | ncentration, D=D | epletion, RM=Re | educed Matrix, C | S=Covered or | Coated S | Sand Gra | ains. ² Lo | cation: PL= | Pore Lining, M=N | latrix. |
| Hydric Soil I | ndicators: (App | licable to all LR | Rs, unless othe | rwise noted.) | | | | | lematic Hydric | |
| Histosol | (A1) | |] Sandy Redox (| S5) | | | | m Muck (A10 | | |
| | pipedon (A2) | | Stripped Matrix | (S6) | | | _ | d Parent Mat | | |
| Black Hi | , , | | Loamy Mucky I | | except MI | LRA 1) | | - | ark Surface (TF1 | 2) |
| | n Sulfide (A4) | <u> </u> | Loamy Gleyed | | | | Oth | er (Explain i | n Remarks) | |
| | Below Dark Sur | ace (A11) | Depleted Matrix | | | | 31 | | | |
| _ | irk Surface (A12) lucky Mineral (S1 | \ | ☑ Redox Dark Su ☑ Depleted Dark | ` ' | | | | | phytic vegetation by must be preser | |
| | leyed Matrix (S4) | _ | Redox Depress | , , | | | | | or problematic. | π, |
| | ayer (if present | | 1 Rodox Boproot | 7,01,0 (1 0) | | | | oo alotarboa | or problemate. | |
| | | | | | | | | | | |
| Depth (ind | | | | | | | Hydric Soil | Present? | Yes 🗆 I | No 🔽 |
| Remarks: | , | | | | | | | | | |
| | | | | | | | | | | |
| HYDROLO | | | | | | | | | | |
| = | Irology Indicator | | | | | | | | | |
| | ators (minimum o | of one required; c | | | | | | , | tors (2 or more re | |
| | Water (A1) | | | ined Leaves (I | | ept | V | | d Leaves (B9) (N | ILRA 1, 2, |
| _ | ter Table (A2) | | | 1, 2, 4A, and | 4B) | | | 4A, and 4 | • | |
| Saturation | . , | | Salt Crust | | 140) | | | rainage Pat | | |
| | arks (B1) | | | vertebrates (B Sulfide Odor (| | | | | Nater Table (C2) | (00) |
| | t Deposits (B2) osits (B3) | | _ : : | Suifide Odor (Rhizospheres : | ` ' | ina Boot | | | sible on Aerial Im Position (D2) | agery (C9) |
| | t or Crust (B4) | | | of Reduced In | _ | ilig Kool | | Shallow Aqui | | |
| | osits (B5) | | _ | n Reduction in | , , | oils (C6) | | AC-Neutral | | |
| | Soil Cracks (B6) | | | Stressed Pla | | | | | lounds (D6) (LRF | 2 Δ) |
| _ | on Visible on Aeri | al Imagery (B7) | | olain in Remar | | | | | Hummocks (D7) | () |
| | Vegetated Conc | | , , | | | | | 1001110010 | riaiiiiiooko (B1) | |
| Field Observ | | , | | | | | | | | |
| Surface Wate | er Present? | Yes 🗆 No | ✓ Depth (in | ches): | | | | | | |
| Water Table | Present? | Yes No | | ches): | | | | | | |
| Saturation Pr | | Yes No | | ches): | | Wetla | ınd Hydrolog | v Present? | Yes 🗌 | No 🔽 |
| (includes cap | illary fringe) | | | | | | | | | |
| Describe Red | corded Data (stre | am gauge, monit | oring well, aerial | photos, previo | us inspec | ctions), i | f available: | | | |
| D | | | | | | | | | | |
| Remarks: No evidence | of wetlandy hy | drology observ | ed. Soil dry | | | | | | | |
| 5 11461160 | . SSualidy fly | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| Project/Site: Schrieber Meadows | City/County: Lincoln | Sampling Date:7/15/2021 |
|--|------------------------------|---|
| Applicant/Owner: MDT | | State: Montana Sampling Point: DP01w |
| Investigator(s): R Quire, S Weyant | | |
| Landform (hillslope, terrace, etc.): Floodplain | | |
| Subregion (LRR): LRR E | Lat:48.109689 | Long:115.414007 Datum: NAD 83 |
| Soil Map Unit Name: 105: Aquic Udifluvents, poorly draine | ed, 0-5% slopes | NWI classification: PEM1C: Freshwater E |
| Are climatic / hydrologic conditions on the site typical for this til | me of year? Yes 🔽 No 🔼 | (If no, explain in Remarks.) |
| Are Vegetation $\underline{\hspace{1cm}}$, Soil $\underline{\hspace{1cm}}$, or Hydrology $\underline{\hspace{1cm}}$ sign | nificantly disturbed? Are "N | lormal Circumstances" present? Yes 🗹 No 🔲 |
| Are Vegetation, Soil, or Hydrology natu | urally problematic? (If nee | ded, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS - Attach site map sh | owing sampling point lo | cations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No Wetland Hydrology Present? Yes ✓ No | Is the Sampled A | |
| Remarks: PEM riverine/slope wetland. | | |
| PEW Tiverine/slope wettarid. | | |
| VEGETATION - Use scientific names of plant | | |
| Trace Structures Plot size (20 Feet Redive) Absolute | Domiant Indicator | Dominance Test worksheet |
| Tree Stratum Plot size (30 Poot Radius) % Cover: | Species? Status | Number of Dominant Species that are OBL, FACW or FAC: 2 (A) |
| | | Total Number of Dominant Species Across All Strata: 2 (B) |
| Sapling/Shrub Stratum Plot size (15 Foot Radius) | | Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B) |
| <u> </u> | | Prevalence Index worksheet |
| | | Total % Cover of: Multiply by: OBL species 39 X 1 39 |
| | | FACW species 35 X 2 70 |
| | | FAC species 0 X 3 0 |
| Herbaceous Stratum Plot size (5 Foot Radius) | | FACU species 0 X 4 0 UPL species 1 X 5 5 |
| Carex utriculata 35 | ✓ OBL | |
| Epilobium brachycarpum 1 | □ NL | Column Totals 75 (A) 114 (B) |
| Glyceria grandis 4 | OBL | Prevalence Index = B/A = 1.52 |
| Phalaris arundinacea 35 | ✓ FACW | Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation |
| | | ✓ 2 - Dominance Test is >50% |
| | | ✓ 3 - Prevalence Index is <= 3.0 |
| | | 4 - Morphological Adaptations (Provide supporting data in remarks or on separate |
| | | sheet. |
| | | ☐ 5 - Wetland Non-Vascular Plants |
| | | ☐ Problematic Hydrophytic Vegetation (Explain) |
| Woody Vine Stratum Plot size (30 Foot Radius) | | Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. |
| Percent Bare Ground 25 | | Hydrophytic Vegetation Yes ✓ NO □ Present? |
| Remarks: BG/litter=25%. Evidence of hydrophytic vegetation inc | ludes passing the rapid test | passing the dominance test, and a prevalence |
| index less than or equal to 3.0. | | , g |
| US Army Corps of Engineers | | Western Mountains, Valleys, and Coasts - Version 2.0 |

| SOIL | | | | | | | | | S | ampling Point: | DP01w |
|-----------------------------|--------------|------------|---------------|------------------------|-------------------|--------------------|-----------------|-------------|-------------|-----------------|----------------|
| Profile Des | cription: (| Describe | to the dep | th needed to docu | ment the indica | tor or c | onfirm th | e absence | | | |
| Depth | | Matrix | | Red | ox Features | | | | | | |
| (inches) | Color | (moist) | % | Color (moist) | % Typ | pe ¹ Lo | oc ² | Texture | | Remarks | |
| 0-02 | 10YR | 2/2 | 100 | | | | R | oots | | | |
| 02-16 | 10YR | 2/2 | 100 | | | | P | eat | | | |
| | · - | | _ | | | | | | | | |
| | | | | - | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| ¹ Type: C=C | concentratio | on, D=De | pletion, RM | =Reduced Matrix, C | S=Covered or C | oated Sa | and Grains | | | Pore Lining, M | |
| Hydric Soil | Indicators | : (Appli | cable to all | LRRs, unless other | erwise noted.) | | | Indicato | rs for Prob | lematic Hydr | ic Soils³: |
| Histoso | | | | Sandy Redox | | | | | n Muck (A1 | | |
| _ | pipedon (A | .2) | | Stripped Matrix | ` , | | | | Parent Ma | , , | |
| | listic (A3) | | | | Mineral (F1) (ex | cept ML | .RA 1) | | | ark Surface (T | F12) |
| | en Sulfide (| . , | | Loamy Gleyed | | | | Othe | er (Explain | n Remarks) | |
| | ed Below Da | | ce (A11) | Depleted Matri | ` ' | | | | | | |
| _ | ark Surface | | | Redox Dark Si | , , | | | | | ohytic vegetati | |
| | Mucky Mine | | | Depleted Dark | . , | | | | | y must be pre | |
| | Gleyed Mat | | | Redox Depres | sions (F8) | | | unles | s disturbed | or problemation |) . |
| Restrictive | | resent): | | | | | | | | | |
| Type: | | | | | | | | | | | |
| Depth (in | nches): | | | | | | | lydric Soil | Present? | Yes <u> </u> | No |
| | | | | | | | | | | | |
| HYDROLC | GY | | | | | | | | | | |
| Wetland Hy | | dicators | : | | | | | | | | |
| _ | == | | | d; check all that app | ly) | | | Secor | dary Indica | tors (2 or more | e required) |
| <u>✓</u> Surface | | | | | ained Leaves (B9 | 9) (excer | nt | | | d Leaves (B9) | |
| High W | | | | | 1, 2, 4A, and 4 | | | | 4A, and 4 | | (, _, |
| Saturati | | (/ (2) | | Salt Crus | | ٥, | | Пп | | terns (B10) | |
| | /larks (B1) | | | | ivertebrates (B13 | 3) | | | | Water Table (C | 2) |
| | nt Deposits | · (B2) | | | Sulfide Odor (C | | | | • | sible on Aerial | • |
| | posits (B3) | | | | Rhizospheres al | | a Poets (| | | Position (D2) | illiagely (C9) |
| | at or Crust | | | | of Reduced Iron | _ | ig ivoots (| · — | hallow Aqui | , , | |
| | posits (B5) | | | | | | :la (CC) | | | | |
| | . , , | | | | on Reduction in | | | | AC-Neutral | | DD A) |
| | Soil Crack | | . (5 | _ | r Stressed Plant | | LRR A) | | | lounds (D6) (L | |
| _ | | | Imagery (B | <i>,</i> — , | plain in Remarks | s) | | F | ost-Heave | Hummocks (D | 7) |
| | | d Concav | e Surface (| B8) | | | | | | | |
| Field Obser | | | | | | 0.5 | | | | | |
| Surface Wat | ter Present | | | | nches): | | | | | | |
| Water Table | | | | | nches): | | | | | | |
| Saturation P | | | Yes <u></u> ✓ | No Depth (ir | nches): | | Wetland | Hydrolog | / Present? | Yes <u> </u> | No <u> </u> |
| (includes ca Describe Re | corded Da | ta (strear | n gauge, m | onitoring well, aerial | photos, previous | s inspect | tions), if a | /ailable: | | | |
| | | | | | | | | | | | |
| Remarks: | | | | | | | | | , e | | |
| | | | | s surface water, h | igh water table | , soil sa | aturated t | o surface, | sulfidic o | dor, geomorp | nic position, |
| and a posit | ive FAC-N | ieutrai te | est. | | | | | | | | |
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| Project/Site: Schrieber Meadows | City/County: Lincoln | Sampling Date:7/15/2021 |
|---|---------------------------------|---|
| Applicant/Owner: MDT | | State: Montana Sampling Point: DP02u |
| Investigator(s): R Quire, S Weyant | Section, Township, Ran | |
| Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, co | onvex, none): flat Slope (%): 2 |
| Subregion (LRR): LRR E | _ Lat: 48.114583 | Long:115.420615 Datum: NAD 83 |
| Soil Map Unit Name: 105: Aquic Udifluvents, poorly dra | ined, 0-5% slopes | 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 \square , Soil \square , or Hydrology \square s | gnificantly disturbed? Are "N | lormal Circumstances" present? Yes 🗹 No 🔲 |
| Are Vegetation, Soil, or Hydrology n | aturally problematic? (If nee | eded, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS - Attach site map | showing sampling point lo | cations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: | Is the Sampled within a Wetland | |
| Upland sample point on terrace upslope of excavate | d depression and upslope of w | etland boundary. |
| VEGETATION - Use scientific names of plan | t | |
| Tree Stratum Plot size (30 Foot Radius) Absolute % Cover: | | Dominance Test worksheet |
| , 301si. | openior. Clara | Number of Dominant Species that are OBL, FACW or FAC: 1 (A) |
| | | Total Number of Dominant Species Across All Strata: 2 (B) |
| Sapling/Shrub Stratum Plot size (15 Foot Radius) | | Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B) |
| , | | Prevalence Index worksheet |
| | | Total % Cover of: Multiply by: OBL species 0 X 1 0 |
| | | FACW species 0 X 2 0 |
| | | FAC species 25 X 3 75 |
| Herbaceous Stratum Plot size (5 Foot Radius) | | FACU species 0 X 4 0 UPL species 40 X 5 200 |
| Agrostis capillaris 15 | √ FAC | Column Totals 65 (A) 275 (B) |
| Alopecurus pratensis 10 | FAC | (,(, |
| Bromus inermis 40 | ✓ UPL | Prevalence Index = B/A = 4,23077 Hydrophytic Vegetation Indicators |
| | | 1 - Rapid Test for Hydrophytic Vegetation |
| | | 2 - Dominance Test is >50% |
| | | ☐ 3 - Prevalence Index is <= 3.0 |
| | | 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. |
| | | 5 - Wetland Non-Vascular Plants |
| | | Problematic Hydrophytic Vegetation (Explain) |
| | | Indicators of hydric sil and wetland hydrology must be |
| Woody Vine Stratum Plot size (30 Foot Radius) | | present, unless disturbed or problematic for #3, 4, 5. |
| Percent Bare Ground 35 | | Hydrophytic Vegetation Present? NO ✓ |
| Remarks: | | 1 |
| BG/litter=35%. Data point is dominated by upland ve | egetation. | |
| US Army Corps of Engineers | | Western Mountains, Valleys, and Coasts - Version 2.0 |

| Profile Desc | | | | | | | | | | | Sampling Point: DP02u |
|---|--|--|--|---|---|---|---|-----------------------------------|---------------------------------------|----------------------------|---|
| | cription: (E | Describe t | o the dept | h needed | to docume | ent the i | ndicato | r or c | onfirm | the absence | e of indicators.) |
| Depth | 0-1 | Matrix | | 0-1 | | Features | | 1 | | T | Damada |
| (inches) | Color (i | | % | Color (m | noist) | <u> </u> | _Type ¹ | L(| oc² | Texture | Remarks |
| 0-13 | 10YR | 2/2 | 100 | | | | | | Silty | Clay Loam | |
| 13-16 | 10YR | 2/2 | 99 7 | 7.5YR | 4/6 | 1 | С | M | Silty | Clay Loam | |
| | | | | | | | | _ | | | |
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| | | | | | , | | | | | | |
| ¹ Type: C=Co | oncentratio | n D=Denle | etion RM= | Reduced M | Matrix CS= | :Covered | I or Coa | ted Sa | and Gra | nins ² l c | cation: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | | | | | | ica oe | and Ore | | ors for Problematic Hydric Soils ³ : |
| Histosol | (A1) | | | Sandy | Redox (S5 | 5) | | | | 2 c | m Muck (A10) |
| | pipedon (A2 | 2) | | | ed Matrix (S | , | | | | _ | d Parent Material (TF2) |
| Black Hi | , , | | | | Mucky Mi | | | pt ML | RA 1) | | ry Shallow Dark Surface (TF12) |
| | en Sulfide (<i>F</i> d Below Da | | . (Δ11) | | Gleyed M | |) | | | Oth | ner (Explain in Remarks) |
| | u веюж ва ark Surface | | : (ATT) . | | ed Matrix (Dark Surfa | | | | | 3Indicat | ors of hydrophytic vegetation and |
| _ | lucky Mine | , | • | _ | ed Dark Su | , , | 7) | | | | and hydrology must be present, |
| | Sleyed Matr | | | Redox | Depressio | ns (F8) | • | | | | ss disturbed or problematic. |
| Restrictive I | Layer (if pr | esent): | | | | | | | | | |
| Туре: | | | | | | | | | | | |
| Depth (inc | ches): | | | | | | | | | Hydric Soi | l Present? Yes No <u>✔</u> |
| | | | | | | | | | | | |
| HYDROLO | | | | | | | | | | | |
| wetiand Hyd | | d:4 | | | | | | | | | |
| - | == | dicators: | ao roquirod | · abook all | that apply) | | | | | Sono | andan / Indicators (2 or more required) |
| Primary Indic | cators (mini | mum of or | ne required | | | ad Lague | as (BQ) (| - Avoor | 1 | | Indary Indicators (2 or more required) |
| Primary Indic | cators (mini Water (A1) | mum of or | ne required | | /ater-Stain | | | excep | ot | | Water-Stained Leaves (B9) (MLRA 1, 2, |
| Primary Indic | cators (mini Water (A1) ater Table (A | mum of or | ne required | w | /ater-Stain | 2, 4A, a | | excer | ot | | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| Primary Indice Surface High Wa | cators (mini Water (A1) ater Table (A on (A3) | mum of or | ne required | w | Vater-Stain MLRA 1, alt Crust (E | 2, 4A, a 311) | nd 4B) | excer | ot | | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) |
| Primary Indic Surface High Wa Saturatio Water M | cators (mini Water (A1) ater Table (A | mum of or 42) | ne required | | /ater-Stain | 2, 4A, a 311) rtebrates | nd 4B) | excer | ot | | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| Primary Indic Surface High Wa Saturatic Water M Sedimen | cators (mini Water (A1) ater Table (A on (A3) larks (B1) | mum of or 42) | ne required | S S H | Vater-Staino MLRA 1, alt Crust (E quatic Inve | 2, 4A, a 311) Intebrates ulfide Od | nd 4B) s (B13) lor (C1) | | | | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep | cators (mini Water (A1) ater Table (A on (A3) larks (B1) nt Deposits | <u>mum of or</u> A2) (B2) | ne required | W S A H | Vater-Stain MLRA 1, alt Crust (E quatic Inve ydrogen Si | 2, 4A, a 311) rtebrates ulfide Od izospher | nd 4B) s (B13) lor (C1) res alone | g Livin | | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 |
| Primary Indice Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma | cators (mini Water (A1) ater Table (/on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (bosits (B5) | mum of on A2) (B2) B4) | ne required | □ W □ S □ A □ H □ P □ R | Mater-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si xidized Rh resence of ecent Iron | 2, 4A, a 311) rtebrates ulfide Od izospher Reduce Reductio | nd 4B) s (B13) lor (C1) res along d Iron (C | g Livin C4) ed So | ig Root ils (C6) | | 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) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface | cators (mini Water (A1) ater Table (A) on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (cosits (B5) Soil Cracks | mum of or A2) (B2) B4) 5 (B6) | | W S A H O P R S | Water-Stain MLRA 1, alt Crust (E quatic Inve ydrogen Si xidized Rh resence of ecent Iron tunted or S | 2, 4A, a 311) rtebrates ulfide Oc izospher Reduce Reduction | nd 4B) s (B13) for (C1) res along d Iron (C on in Till Plants (| g Livin C4) ed So | ig Root ils (C6) | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface | cators (mini Water (A1) ater Table (A) on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (Cosits (B5) Soil Cracks on Visible of | mum of or A2) (B2) B4) s (B6) on Aerial In | nagery (B7 | W S A H O P R S O | Mater-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si xidized Rh resence of ecent Iron | 2, 4A, a 311) rtebrates ulfide Oc izospher Reduce Reduction | nd 4B) s (B13) for (C1) res along d Iron (C on in Till Plants (| g Livin C4) ed So | ig Root ils (C6) | s (C3) | 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) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic | cators (mini Water (A1) ater Table (A) on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (Cosits (B5) Soil Cracks on Visible of y Vegetated | mum of or A2) (B2) B4) s (B6) on Aerial In | nagery (B7 | W S A H O P R S O | Water-Stain MLRA 1, alt Crust (E quatic Inve ydrogen Si xidized Rh resence of ecent Iron tunted or S | 2, 4A, a 311) rtebrates ulfide Oc izospher Reduce Reduction | nd 4B) s (B13) for (C1) res along d Iron (C on in Till Plants (| g Livin C4) ed So | ig Root ils (C6) | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely | cators (mini Water (A1) ater Table (An) ater (B1) ater Crust (B3) ater Crust (B5) Soil Cracks and Visible of a Vegetated vations: | Mum of or A2) (B2) B4) s (B6) on Aerial In I Concave | nagery (B7 Surface (E | W S A H O P R S S. | Mater-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se other (Explain | 2, 4A, a 311) rtebrates ulfide Oc izospher Reduce Reduction itressed ain in Rei | nd 4B) s (B13) lor (C1) res along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | ig Root ils (C6) | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observa | cators (mini Water (A1) ater Table (And (A3) Alarks (B1) Ant Deposits Boosits (B3) Ant or Crust (B3) Ant or Crust (B3) And or Crust (B3) A | Mum of or A2) (B2) B4) s (B6) on Aerial In I Concave | nagery (B7 Surface (E | W S A A A A A A A A A | Water-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se other (Explana | 2, 4A, a 311) rtebrates ulfide Oci izospher Reducte Reduction stressed sin in Rei | nd 4B) s (B13) lor (C1) res along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | ig Root ils (C6) | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Table | cators (mini Water (A1) ater Table (An) ater Trust (Bn) ater Table (An) ater T | Mum of on A2) (B2) B4) s (B6) on Aerial In I Concave | nagery (B7 Surface (E es N | W S A A A A A A A A A | Water-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or S ther (Expla | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduces Reduction stressed ain in Res es):es):es): | nd 4B) s (B13) or (C1) es alone d Iron (C on in Till Plants (marks) | g Livin C4) ed So D1) (L | ig Root ils (C6) .RR A) | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) |
| Primary Indice Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Table Saturation Pr (includes cap | cators (mini Water (A1) ater Table (An) ater Trust (B3) ater Trust (B3) Soil Cracks ater Vegetated vations: are Present? are Present? are Present? | Mum of on A2) (B2) B4) In Aerial In Concave Ye Ye Ye | nagery (B7 Surface (E es N es N | W S A A A A A A A A A | Water-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se other (Explain Depth (inch Depth (inch | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduce Reductic stressed ain in Red es): es): es): | nd 4B) s (B13) lor (C1) les along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | g Root ils (C6) .RR A) Wetla | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Table Saturation Pri | cators (mini Water (A1) ater Table (An) ater Trust (B3) ater Trust (B3) Soil Cracks ater Vegetated vations: are Present? are Present? are Present? | Mum of on A2) (B2) B4) In Aerial In Concave Ye Ye Ye | nagery (B7 Surface (E es N es N | W S A A A A A A A A A | Water-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se other (Explain Depth (inch Depth (inch | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduce Reductic stressed ain in Red es): es): es): | nd 4B) s (B13) lor (C1) les along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | g Root ils (C6) .RR A) Wetla | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Table Saturation Pr (includes cap | cators (mini Water (A1) ater Table (An) ater Trust (B3) ater Trust (B3) Soil Cracks ater Vegetated vations: are Present? are Present? are Present? | Mum of on A2) (B2) B4) In Aerial In Concave Ye Ye Ye | nagery (B7 Surface (E es N es N | W S A A A A A A A A A | Water-Staine MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se other (Explain Depth (inch Depth (inch | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduce Reductic stressed ain in Red es): es): es): | nd 4B) s (B13) lor (C1) les along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | g Root ils (C6) .RR A) Wetla | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) |
| Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water Table Saturation Pr (includes cap Describe Rec | cators (mini Water (A1) ater Table (A) on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (B3) Soil Cracks on Visible of vegetated vations: er Present? Present? resent? corded Data | Mum of on A2) (B2) B4) s (B6) on Aerial In I Concave Ye Ye Ye s) a (stream s | nagery (B7 Surface (E es | W S A A A A A A A A A | Water-Stains MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se ether (Explain) Depth (inch Depth (inch Depth (inch Depth (inch | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduce Reductic stressed ain in Red es): es): es): | nd 4B) s (B13) lor (C1) les along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | g Root ils (C6) .RR A) Wetla | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) |
| Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Table Saturation Pr (includes cap | cators (mini Water (A1) ater Table (A) on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (B3) Soil Cracks on Visible of vegetated vations: er Present? Present? resent? corded Data | Mum of on A2) (B2) B4) s (B6) on Aerial In I Concave Ye Ye Ye s) a (stream s | nagery (B7 Surface (E es | W S A A A A A A A A A | Water-Stains MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se ether (Explain) Depth (inch Depth (inch Depth (inch Depth (inch | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduce Reductic stressed ain in Red es): es): es): | nd 4B) s (B13) lor (C1) les along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | g Root ils (C6) .RR A) Wetla | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) |
| Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water Table Saturation Pr (includes cap Describe Rec | cators (mini Water (A1) ater Table (A) on (A3) larks (B1) nt Deposits cosits (B3) at or Crust (B3) Soil Cracks on Visible of vegetated vations: er Present? Present? resent? corded Data | Mum of on A2) (B2) B4) s (B6) on Aerial In I Concave Ye Ye Ye s) a (stream s | nagery (B7 Surface (E es | W S A A A A A A A A A | Water-Stains MLRA 1, alt Crust (E quatic Inve ydrogen Si exidized Rh resence of ecent Iron tunted or Se ether (Explain) Depth (inch Depth (inch Depth (inch Depth (inch | 2, 4A, a B11) rtebrates ulfide Oc izospher Reduce Reductic stressed ain in Red es): es): es): | nd 4B) s (B13) lor (C1) les along d Iron (Con in Till Plants (marks) | g Livin C4) ed So D1) (L | g Root ils (C6) .RR A) Wetla | s (C3) | Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Baturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Bhallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) |

| Project/Site: Schrieber Meadows | City/County: Lincoln | Sampling Date:7/15/2021 |
|--|--------------------------------------|---|
| Applicant/Owner: MDT | | State: Montana Sampling Point: DP02w |
| Investigator(s): R Quire, S Weyant | Section, Township, Rang | ge: S 11 T 27N R 30W |
| Landform (hillslope, terrace, etc.): Depression | Local relief (concave, co | onvex, none): concave Slope (%): 4 |
| Subregion (LRR): LRR E | _at:48.114607 | Long:115.420497 _{Datum:} NAD 83 |
| Soil Map Unit Name: 105: Aquic Udifluvents, poorly draine | ed, 0-5% slopes | NWI classification: Not Mapped |
| Are climatic / hydrologic conditions on the site typical for this tire | ne of year? Yes 🗹 No 🔼 | (If no, explain in Remarks.) |
| Are Vegetation, Soil, or Hydrology sign | ificantly disturbed? Are "N | ormal Circumstances" present? Yes 🗹 No 🔲 |
| Are Vegetation, Soil, or Hydrology natu | rally problematic? (If need | ded, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS - Attach site map sh | owing sampling point lo | cations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No Wetland Hydrology Present? Yes ✓ No | Is the Sampled A | |
| Remarks: PEM depressional wetland. | | |
| | | |
| VEGETATION - Use scientific names of plant | | |
| Total Otto Access Districts (OO Free Destina) | Domiant Indicator Species? Status | 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) |
| Sapling/Shrub Stratum Plot size (15 Foot Radius) | | Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B) |
| Populus balsamifera 5 | ▼ FAC | Prevalence Index worksheet |
| | | Total % Cover of: Multiply by: OBL species 36 X 1 36 |
| | | FACW species 4 X 2 8 |
| | | FAC species 5 X 3 15 |
| Herbaceous Stratum Plot size (5 Foot Radius) | | FACU species 0 X 4 0 UPL species 0 X 5 0 |
| Eleocharis palustris 30 | ✓ OBL | Column Totals 45 (A) 59 (B) |
| Phalaris arundinacea 4 | FACW | Prevalence Index = B/A = 1.31111 |
| Typha latifolia 5 | ☐ OBL | Hydrophytic Vegetation Indicators |
| Veronica scutellata 1 | OBL | 1 - Rapid Test for Hydrophytic Vegetation |
| | | ✓ 2 - Dominance Test is >50% |
| | | ✓ 3 - Prevalence Index is <= 3.0 |
| | | 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. |
| | | 5 - Wetland Non-Vascular Plants |
| | | Problematic Hydrophytic Vegetation (Explain) |
| Woody Vine Stratum Plot size (30 Foot Radius) | | Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. |
| Percent Bare Ground 55 | | Hydrophytic Vegetation Present? Ves ✓ NO |
| Remarks: | | |
| BG/litter=55%. Populus balsamifera volunteer seedling vegetation includes passing the dominance test and a | | |
| US Army Corps of Engineers | | Western Mountains, Valleys, and Coasts - Version 2.0 |

| SOIL | | | | | | | | | | | San | npling Point: [| DP02w |
|-------------------------|--------------------------|------------|--------------|------------|---------------------------|----------------------|--------------------|------------------|---------|----------------|------------------------------------|-------------------------------|------------|
| Profile Desc | ription: (| Describe | to the de | oth neede | d to docur | nent the i | ndicato | r or co | nfirm 1 | the absence of | | | |
| Depth | | Matrix | | | | x Features | | | 2 | | | | |
| (inches) | | (moist) | % | | (moist) | <u>%</u> | _Type ¹ | | | Texture | | Remarks | |
| 0-05 | 10YR | 4/2 | 85 | N | 6/0 | 5 | D | M | Si | ilty Clay | | | |
| 0-05 | | | | 7.5YR | 4/6 | 10 | С | M | | | | | |
| 05-16 | 10YR | 4/2 | 60 | 2.5YR | 3/6 | 5 | С | М | Si | ilty Clay | | | |
| 05-16 | | | | 7.5YR | 4/6 | 35 | С | М | | | | | |
| | | | - | | | | | | | | | | |
| | | | - | | | | | | | | | | |
| ¹Type: C=Co | | | | | | | | ted San | ıd Gra | | | ore Lining, M= | |
| Hydric Soil I | | : (Applic | able to al | | | | ea.) | | | | | matic Hydric | Solls : |
| Histosol | | 0) | | | dy Redox (| - | | | | | Muck (A10) | :-! (TEO) | |
| | pipedon (A | 2) | | _ : | ped Matrix | | | | | | arent Mater | , , | |
| Black Hi | stic (A3) n Sulfide (| ΔΔ) | | | my Mucky N my Gleyed | | | pt MLR | A 1) | | Shallow Dar (Explain in | k Surface (TF Remarks) | 12) |
| | d Below Da | | e (A11) | | leted Matrix | | , | | | outer | (Explain iii | (Cinanto) | |
| = | ark Surface | , , | | = | ox Dark Su | ` ' | | | | | | ytic vegetatio | |
| | lucky Mine | | | | leted Dark | | 7) | | | | | must be prese problematic. | ent, |
| Restrictive L | leyed Mat | | | Rec | ox Depress | ions (F8) | | | | uniess | disturbed or | problematic. | |
| Type: | , (- | ,. | | | | | | | | | | | |
| Depth (inc | ches): | | | | | | | | | Hydric Soil P | resent? ` | Yes 🗸 | No 🔲 |
| Remarks: | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| HYDROLO | GY | | | | | | | | | | | | |
| Wetland Hyd | | | | | | | | | | | | | |
| Primary Indic | | | ne require | d; check | , | | /=- > | | | | | rs (2 or more | |
| | Water (A1) | | | | Water-Stai | | | | | | | Leaves (B9) (| MLRA 1, 2, |
| High vva ✓ Saturatio | ter Table (| (A2) | | | Salt Crust | 1, 2, 4A, a (B11) | na 4B) | | | | IA, and 4B) inage Patte | | |
| | arks (B1) | | | T | Aquatic In | | s (B13) | | | | - | ater Table (C2 |)) |
| | nt Deposits | (B2) | | | Hydrogen | | | | | | | ole on Aerial I | * |
| | osits (B3) | . , | | | Oxidized F | | , , | | Roots | | morphic Po | | 3 7 () |
| Algal Ma | t or Crust | (B4) | | | Presence | of Reduce | d Iron (| C4) | | Sha | llow Aquita | rd (D3) | |
| : | osits (B5) | | | | Recent Iro | | | | | _ | C-Neutral Te | ` ' | |
| <u>✓</u> Surface | | | | | Stunted or | | | (D1) (LR | RA) | | | unds (D6) (LF | |
| | on Visible | | | | Other (Exp | olain in Re | marks) | | | Fro: | st-Heave Hu | ımmocks (D7 |) |
| Field Observ | Vegetate | u Concave | Surface | (00) | | | | | | | | | |
| Surface Wate | | 2 V | es \square | No 🔽 | Depth (in | ches). | | | | | | | |
| Water Table | | | es \square | | Depth (in | | | | | | | | |
| Saturation Pr | esent? | Y | es 🔽 | | Depth (inc | | | _ | Netlar | nd Hydrology F | Present? | Yes <u>V</u> | No |
| Describe Red | | | ı gauge, m | onitoring | well, aerial _l | photos, pre | evious ii | nspectio | ns), if | available: | | | |
| Remarks: | | | | | | | | | | | | | |
| Evidence of | | | | s soils sa | aturated to | surface, | surfac | e soil c | racks | , saturation o | n aerials, ເ | geomorphic | position, |
| and a positiv | ve FAC-N | leutral te | st. | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

MDT Montana Wetland Assessment Form (revised March 2008

| 1. Project name Schi | rieber Meadows | 2. MDT project# | NH 27 (021) | Control# | 1027001 | |
|---|--|---|--|--|---|--|
| 3. Evaluation Date 10/8 | 3/2021 4. Evaluators | R Quire 5. | Wetland/Site# (s) Creation | n | | |
| 6 Watland Lagation(a): | T 27N R 30 | 0W Sec1 11,12,13 | T | Sec2 | | |
| Wetland Location(s):Approx Stationing or Mile | | | T | Sec2 | | |
| Watershed 1 - Kooten | | atershed/County Lincoln | <u> </u> | | | |
| 7. Evaluating Agency | CCI for MDT | | | | 00.40 | |
| | GOT TOT TVID T | | 8. Wetland size acre | | 22.48 | |
| Purpose of Evaluation | effected by MDT was locat | | How assessed: | Measured e.g | | |
| | affected by MDT project | | 9. Assesssment are (AA) size (acres) | a | 22.48 | |
| ☐ Mitigation Wetlands: | | | How assessed: | Measured e.g. | . by GPS | |
| ✓ Mitigation Wetlands: | post construction | | | | | |
| Other | | | | | | |
| 10. Classification of Wetl | and and Aquatic Habitats | in AA | | | | |
| HGM Class (Brinson) | Class (Cowardin) | Modifier (Coward | in) Water Regime | % of | AA | |
| Depressional | Emergent Wetland | Excavated | Permanent/Perennia | i | 35 | |
| Depressional | Aquatic Bed | Excavated | Permanent/Perennia | i i | 10 | |
| Slope | Emergent Wetland | | Seasonal/Intermitten | t | 20 | |
| Slope | Emergent Wetland | | Permanent/Perennia | | 35 | |
| | | | | | | |
| | | | | | | |
| General Condition of i. Disturbance: (use matri aquatic nuisance vegetation | ix below to determine [circle] ap | | tructions for Montana-listed noxio | | | |
| Conditions | within 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 logged; subje placement, grad hydrological alte building density. | 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 predo grazed, hayed, logged, or otherwise roads or occupied buildings; and no <=15%. | converted; does not contain | low disturbance | low disturbance | moderate | moderate disturbance | |
| AA not cultivated, but may be model selectively logged; or has been subj placement, or hydrological alteration noxious weed or ANVS cover is <=3 | ect to relatively minor clearing, fill n; contains few roads or buildings; | moderate disturbance | moderate disturbance | high dis | sturbance | |
| AA cultivated or heavily grazed or lo substantial fill placement, grading, chigh road or building density; or not >=30%. | clearing, or hydrological alteration; | high disturbance | high disturbance | high dis | high disturbance | |
| Comments: (types of distu Highway 2 and USFS roads | | | al noxious weeds, and low dis | turbance. | | |
| ii. Prominent noxious, aqu | | ic species: | | | | |
| Cirsium arvense and Centa | | recunding land was/bab! | tot | | | |
| iii. Provide brief descriptiv AA includes constructed we | | | tat has been created by the plugg | aing of existing d | litches and | |
| channels, creation of a new in a natural state. USES land | stream channel and subsid | ence of the histosol soil ele | evations over time. The surro | unding land is c | urrently managed | |

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Modified Is current management preventing (passive) existence of additional vegetated classes? Existing # of "Cowardin" Vegetated Classes in AA Ratino Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture Μ <NO YES> 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA L Comments: Emergent and aquatic bed classes are present SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT 14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals: i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \odot D \bigcirc S Secondary habitat (list Species) Grizzly bear D S Incidental habitat (list species) S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M .3L .1L 0L Rating USFWS database, MTNHP database shows site is within year-round range of grizzly bear, Sources for reports from FWP, USFWS, and FS on use. documented use 14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above) i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions): Primary or critical habitat (list species) D
 S Western toad (S2) D S Secondary habitat (list Species) Incidental habitat (list species) D S S No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None S1 Species: Functional Points and .7M .2L 0L 1H .8H .6M .1L Rating S2 and S3 Species: Functional Points and .7M .6M .5M .2L .1L 0L .9H Rating

| Sources for | MTNHP and documented breeding on site by MDT and USFS personnel. |
|----------------|--|
| documented use | |
| | |

| | | | | | | | | | | | | | | | | | | | Subs | stanti | al | |
|--|--|-------------------------|--------------------------------|-------------------------|---------------|------------------------|------------------------|------------------|------------------|-------------------|--------------------|-----------------|----------------------------|--------------------------|--------------------------|--------------|------------------|-------------------|------------|---------|----------|-----|
| bstantial (base | d on any o | of the f | ollowin | ng [che | ck]): | | | | | | Minir | nal (b | ased o | n any of | the foll | owing | [check] |): | | | | |
| observations | of abunda | ant wild | dlife #s | or high | n specie | es dive | rsity (du | ring ar | ny period | i) | fe | w or r | o wildli | e obsei | vations | during | g peak ι | ise per | iods | | | |
| abundant wild | llife sign s | such as | s scat, | tracks, | , nest st | ructure | es, gam | e trails | , etc. | | lit | tle to | no wildli | fe sign | | | | | | | | |
| presence of e | xtremely | limiting | g habita | at featu | ıres not | availal | ble in th | e surro | ounding | area | s | oarse | adjacer | t upland | d food s | ources | 3 | | | | | |
| interviews wit | h local bio | ologists | s with k | knowle | dge of t | he AA | | | | | in | tervie | ws with | local bi | ologists | with k | nowled | ge of th | ie AA | | | |
| derate (based of observations common occuradequate adjuinterviews with | of scatter urrence of acent upla | ed wild wildlif | dlife gro e sign od sour | oups or such a | individ | tracks, | | - | | _ | | eriods | | | | | | | | | | |
| i. Wildlife hab rom #13. For other in terms of ermanent/per erms]) | class co of their p | ver to ercer | be control | onside positi | ered ev | enly o | distribu . (see # | ted, tl #10). | ne mos Abbre | t and l | east pos for su | evale urface | ent ve ç e water | jetateo durati | d class ons ar | es m | ust be ollows | within : P/P = | 20% o = | f each | e | |
| tructural iversity (see 13) | | | | Hig | gh | | | | | | | Mod | erate | | | | | Lo | ow | | | |
| lass cover istribution (all egetated asses) | | Eve | n | | | Une | ven | | | Eve | n | | | Une | ven | 1 | | Ev | /en | | | |
| uration of urface water in ≥ 0% of AA | P/P | S/I | T/E | Α | P/P | S/I | T/E | А | P/P | S/I | T/E | Α | P/P | S/I | T/E | Α | P/P | S/I | T/E | А | | |
| ow disturbance t AA (see #12i) | Е | Е | Е | н | Е | Е | Н | Н | Е | Н | Н | М | E | Н | М | м | Е | Н | М | м | | |
| isturbance at AA see #12i) | Н | Н | Н | Н | Н | Н | Н | М | Н | Н | М | М | Н | _M | М | L | Н | М | L | L | | |
| ligh disturbance t AA (see #12i) | М | М | М | L | М | М | L | L | M | М | L | L | M | L | L | L | L | L | L | L | | |
| ii. Rating (≀ Evidence of v | | | _ | ns fro | om i a | nd ii a | above | and | the ma | | | | | • | k] the | | tional | points | s and ı | rating) | | |
| b.etential | | | - | E | хсер | ional | | ┢ | | High | | | - | | Мо | derat | e | | 4 | | Low | -1 |
| Substantial | | | | | 1E | : <u> </u> | | | | .91 | 1 | | | | | 8H | | | | | .7M | |
| /loderate | | | | | .9⊦ | 1 | | | | .71 | Л | | | | | 5M | | | | | .3L | |
| Viinimal | | | | | .6N | 1 | | | | .41 | Л | | | | | 2L | | | | | .1L | |
| omments | Obsei | ved | water | fowl, | wildlii | e, an | d wild | life tr | acks/s | cat du | uring t | he 2 | 021 s | te visi | it. | | | | | | | |
| D. General I uld be used storable due NA here | by fish to habit and pro | i.e., tat co ceed | fish u onstra I to 14 | ise is ints, 4E.) | preclior is r | uded not de d Wa | by pe esired ter | rche of from | d culve a mai | ert or d nagem | other b | arrie ersp | er, etc. ective |]. Ifti [such | he AA as fis | is no hen | ot use trappe | d by f ed in a | ish, fis | sh use | is not | |
| Duration of surfac | e water | | | Pé | emanei | nt / Per | ennial | | | | | Seas | onal / Ir | ntermitte | ent | | | | Tem | norary | / Epheme | ral |
| quatic hiding / re scape cover | sting/ | | Optim | | | dequate | | Po | or | Op | timal | Jas | Adeq | | | Poor | | Optir | | | quate | Po |
| | U 1 / | | 0 S 0 S 0 | | | | | | | | | Т | | | | | | | | | | |
| Thermal cover op Suboptimal | imai/ | C |) | S | 0 | | S | 0 | S | 0 | S | | 0 S O | | | | S | 0 | S | 0 | S | 0 |

FWP Tier II or Native

Game fish species
FWP Tier III or
Introduced Game fish

FWP Non-Game Tier IV

or No fish species

.9H

.8H

.5M

.8H

.7M

.5M

.7M

.6M

.5M

.6M

.5M

.4M

.5M

.5M

.4M

.5M

.4M

.3L

.8H

.7M

.4M

.7M

.6M

.4M

.6M

.5M

.4M

.5M

.4M

.3L

| B-29 | | |
|------|--|--|

.4M

.4M

.3L

.4M

.3L

.2L

.6M

.5M

.2L

.5M

.4M

.2L

.4M

.3L

.2L .1L

.3L

.2L

.2L

.1L

.2L

.1L

.1L

| Sources used for identifying fish sp. potentially iii. Modified Rating (NOTE: Modified score ca) Is fish use of the AA significantly reduced by current final MDEQ list of waterbodies in need of fishery or aquatic life support, or do aquatic nuisyes, reduce score in i above by 0.1: Modified | annot exce a culvert, d of TMDL des | ed 1 or be les ike, or other n velopment wit | man-made s th listed "Pro | bable Imp | aired Úses' | " includin | g cold or wa | | e If | |
|--|---|--|------------------------------|-------------|-----------------------------|--------------------------|----------------------------|---------------------|--------------|-------|
| b) Does the AA contain a documented spawning comments) for native fish or introduced game fis | | her critical ha Y • N | | - | he adjusted | | - | | | |
| iii. Final Score and Rating: .6 M | Comme | nts: Pumpk open w | inseed ar vater in 20 | | | | by MDT a | and moni | toring cre | ws in |
| 14E. Flood Attenuation: (Applies only to wet channel or overbank flow, click NA he | | ct to flooding eed to 14F.) | via in-chanr | el or over | bank flow. I | lf wetland | ls in AA are | not floode | d from in- | |
| i. Rating (working from top to bottom, use the | | | | | | | | -115 | | |
| Estimated or Calculated Entrenchment (Rosge 1994, 1996) | Slight | y entrenched stream type | , , | | ely entrench stream type | ieu – b | Entrench | ed-A, F, G types | stream | |
| % 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 | .9Н | .8H | .5M | .7M | .6M | .4M | .3L | .2L | .1L | |
| | | | | | | | | | _ | |
| Slightly Entrenched ER = >2.2 | | • | Entrenched .41 – 2.2 | | | | ntrenched 2 = 1.0 – 1.4 | | | |
| C stream type D stream type E stream | m type | B strea | am type | A | stream type | | F stream type | G | stream type | 1 |
| | | | | | | 1 | | | | |
| Floodprone width ii. Are ≥10 acres of wetland in the AA subject twithin 0.5 mile downstream of the AA (check)? Comments: Highway adjacent to the signal of the AB (check)? | J Ban widt o flooding A Y | Bank full D | made featur | es which i | Bank 5 = | full Widt Entreno ratio | chment | 7 r floods loc | ated | |
| 14F. Short and Long Term Surface Wa upland surface flow, or groundwater flow. 14G.)i. Rating (Working from top to bottom, uplants) | If no wet | ands in the | AA are sub | oject to fl | ooding or p | onding, | dick | NA here | and proce | ed to |
| water durations are as follows: P/P = peri 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/F | | S/I | T/E | P/P | S/I | T/E |

| turther 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 | .8Н | .8Н | .6M | .5M | .4M | .3L | .2L | | | |
| Wetlands in AA flood or pond < 5 out of 10 years | .9H | .8H | .7M | .7M | .5M | .4M | .3L | .2L | .1L | | | |

Comments:

Extensive areas of perennial inundation greater than 2 feet deep were observed in 2013-2021.

| 14G. throughto 14 | gh influ | ent/Nu x of surf | trient/1 ace or | Foxican ground | t Rete ı water o | ntion a or direc | nd Ren t input. | n oval: (If no w | (Applies vetlands | s to wetl s in the A | ands w \A are | rith pote subject | ntial to to such | receive n input, | sedir click | ments, | | | ortoxicand proc | |
|---|-------------------------------------|---|----------------------------------|------------------------------------|---------------------------------|---------------------------------|--|--|--|--|------------------------|---|--|---|--|--|-----------------------------------|--|--|-------------------|
| i. Ra | ating (w | orking | from to | p to bot | tom, us | e the n | natrix b | elow to | arrive a | at [checl | k] the f | unctiona | l point | s and ra | iting [| H = hiç | gh, N | /1 = ma | oderate, | or L |
| | | ient, and 4 | toxicani | tinput | com not | to deliver pounds substan | r levels o at levels itially imp of nutrien | of sedime such tha paired. M | ents, nutr at otherf linorsed icants, o | vith poter rients, or unctions imentation r signs of | are on, | deve nutrient with po- compour | lopmens, or tox tential to ds such | t for "problicants or odeliver be that other that other that other that other that other that on, so u | bable of AA rehigh le er fund irces o | causes" ceives vels of ctions a | relat or su sedin re sul | ed to s rroundi nents, r bstantia r toxica | d of TMDL ediment, ing land u nutrients, ally impai nts, or sig | ise or red. |
| | | landveg oding/p | | | | ≥ 70% | | | < 70 | 1% | | | ≥ 70 | 1% | | | | < 70 | % | |
| AA co. | ntaine n e | or rest | ricted o | utlet | Yes | | No | Yes | 3 | No | | Yes | _ | No | 1 | | Yes | | No | 1 |
| | | | | | 11 | ⊣ . | 8H | .7N | 1 | .5M | | .5N | 1 | .41 | M | | .3L | | .2L | |
| AA co | ntains ur | nrestrict | ed outle | et | .91 | - 1 | 7М | .6N | 1 | .4M | | .4N | 1 | .3 | L | | .2L | | .1L | 1 |
| Comi | ments | : AA do | ominate | ed by >7 | '0% ree | ed cana | rygrass | s, prese | ence of | flooding | /pondir | ng, no o | utlet. | | | | | | | |
| draina procee | ge, or or ed to 141 ting (wo | n the sho .) rking fro | reline o m top to | f a stand bottom, | ing wate | er body v | which is | subject arrive a | to wave t [check] | the ban action. I | f 14H de | oes not a | ipply, cli I rating) | | | r man-i nere an | | • | | |
| shorelir | ne by spe | and strear cies with s | | | Dorr | manant / [| Darannial | Duration | | e water ad | | | | anan aran / | / Enhan | m a ral | | | | |
| | ee Apper | ndix F). | | | Perr | manent / F | | | | asonal / In | 1 | ι | 16 | emporary | 1 | nerai | | | | |
| ≥ 65% | | | | | | 1H | _ | | | .9⊦ | - | | | | M | | | | | |
| 35-64% < 35% |) | | | | | .7N .3L | _ | | | .6N .2L | | | | _ | 5M 1L | | | | | |
| | Produ | perim | eters o | od Chai | ated ar | eas. ort: | | | | . Specie | | | | | | | | | | |
| | | Biologic sh Habit | | ity (synt) G | | | | | ratings [(14C.iii. | | \neg | | | | | | | | | |
| F | Rating (1 | I4D.iii.) | | E/H | d | | M | | <u> </u> | Ĺ | | | | | | | | | | |
| | E/I | 1 | | Н | Щ | | Н | | | М | | | | | | | | | | |
| | M | | | Н | | | М | | | М | | | | | | | | | | |
| | L | | | М | | | М | | | L | | | | | | | | | | |
| | N/A | Α | | Н | | | М | | _ | L | | | | | | | | | | |
| wetlan subsur [see in | d compo | onent in t tlet; the f ns for fur | the AA; inal thre ther def | Factor B e rows p initions o | = level ertain to f these | of biologo duration | gical acti | vity ratir face wat | ng from a er in the | k] the fur above (14 AA, whe | 4I.i.); Fa ere P/P, | ctor C = | whethe | or not the | he AA ously | contair defined | ns a s d, and | surface A = "a | or | |
| A B | | gh | Mod | ponent >5 a erate | L | OW No. | | igh | Mod | ponent 1-5 | L | ow I No | | igh | М | omponen oderate | | Lo | | |
| C P/P | Yes | No 7H | Yes .8H | No .5M | Yes | No 4M | Yes | No | Yes | No No | Yes | No | Yes | No | Yes | No | | Yes | No l | |
| | 1E | .7H | | | .6M | .4M | .9H | .6M | .7H | .4M | .5M | .3L | .8H | .6M | .6M | 1- | IM | .3L | .2L | |
| S/I | .9H | .6M | .7H | .4M | .5M | .3L | .8H | .5M | .6M | .3L | .4M | .2L | .7H | .5M | .5M | .3 | 3L | .3L | .2L | |
| T/E/A | .8H | .5M | .6M | .3L | .4M | .2L | .7H | .4M | .5M | .2L | .3L | .1L | .6M | .4M | .4M | .2 | 2L . | .2L | .1L | |
| plant co control). a) Is the to the so | ver, ≤ 15 ere an av core in i | 5% noxio rerage ≥ ii above | us weed 50 foot- and adju | d or ANV wide veg ust rating | S cover | , and the upland b ingly: | at is not ouffer arc | subjecte ound ≥ 7 d Ratin | ed to per 5% of th g 1 | i.1.) Veg iodic medical ending in the control of t | chanica cumfere | nce? | orclea Y ● | ring (unle | ess for | weed | | | | |
| Comm | ents: | | | | | ,,9 | | • • | , p. | | , 0 | | | | | - | | | | |

| i. Discharge Ind The AA is a slope we Springs or seeps are Vegetation growing of Wetland occurs at the Seeps are present at AA permanently flood Wetland contains an Shallow water table a Other: | etland known or ob during dorman e toe of a nat the wetland ded during dr outlet, but no and the site is | nt season/dro tural slope edge ought periods o inlet s s aturated to | 5 | Wetl | neable substr and contains am is a know | inlet but no o | vithout under utlet | s lying impedin e volume dec | - | |
|---|---|---|---|---|---|--|-------------------------------|---|-----------------------------------|--|
| iii. Rating (use the inform | nation from i | | and the table Duration of sat | uration at AA | | OM GROUND | NATER DISC | HARGE OR W | ITH WATER | |
| Criteria | | | P/P | | S/I | | Т | N | one | |
| Groundwater Discharge or R | echarge | | 1H | | .7M | | .4M | | .1L | |
| Insufficient Data/Information | | | | | | NA | - | | | |
| AA with p | erennial in | undation/sa | turation to th | e surface. | | | | | | |
| i. Rating (working from to | AA contair or matu wetland c as " | ns fen, bog, v re (>80 yr-olo or plant assoc S1" by the M | varm springs d) forested ciation listed TNHP | AA does cited rai diversity (plant asso | not contain re types and (#13) is high ociation listed the MTNHF | previously structural or contains d as "S2" by | AA doe cited ra and str | s not contain re types or as uctural divers low-modera | ssociations ity (#13) is te | |
| Estimated relative abundance (#11) Low disturbance at AA | rare | commo | abundant | rare | common | abundant | rare | common | abundant | |
| (#12i) | 1H | .9H | .8H | .8H | .6M | .5M | .5M | .4M | .3L | |
| Moderate disturbance at AA (#12i) | .9H | .8H | .7M | .7M | .5M | .4M | .4M | .3L | .2L | |
| High disturbance at AA (#12i) | .8H | .7H | .6M | .6M | .4M | .3L | .3L | .2L | .1L | |
| 14L. Recreation/Educatic i. Is the AA a known or period here and proceed to the Categoric Other iii. Check categoric Other iiii. Rating (use the matrix | otential rec. to the overall es that appl | /ed. site: (ch summary ar ly to the AA: | neck) Y nd rating page) M Education | N Onal/scientific | (if 'Yes' con study; <u>✓</u> C | tinue with the | e evaluation | | elick NA | |
| Known or Potential Recreation | | | | | | | l i | (nown Po | otential | |
| Public ownership or public e | | | c access (no pe | rmission req | uired) | | | .2H | .15H | |
| Private ownership with gene | ral public acc | ess (no permi | ssion required) | | | | Ti | .15H | .1M | |
| Private or public ownership v | without gener | al public acce | ss, or requiring | permission f | for public acce | ess | | .1M | .05L | |
| Comments: Known recreation site | | | | | | | | | | |
| General Site Notes | | | | | | | | | | |
| | | | | | | | | | | |

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

| Function & Value Variables | Rating | Actual Functional Points | Possible Functional Points | Functional Units: (Actual Points x Estimated AA Acreage) | Indicate the four most prominent functions with an asterisk (*) |
|--|--------|--------------------------------|----------------------------------|--|---|
| A. Listed/Proposed T&E Species Habitat | Н | .8 | 1 | 17.98 | |
| B. MT Natural Heritage Program Species Habitat | Н | .9 | 1 | 20.23 | |
| C. General Wildlife Habitat | Е | 1 | 1 | 22.48 | ✓ |
| D. General Fish Habitat | М | .6 | 1 | 13.49 | |
| E. Flood Attenuation | М | .6 | 1 | 13.49 | |
| F. Short and Long Term Surface Water Storage | Н | 1 | 1 | 22.48 | V |
| G. Sediment/Nutrient/Toxicant Removal | Н | 1 | 1 | 22.48 | |
| H. Sediment/Shoreline Stabilization | Н | 1 | 1 | 22.48 | |
| Production Export/Food Chain Support | Е | 1 | 1 | 22.48 | ✓ |
| J. Groundwater Discharge/Recharge | Н | 1 | 1 | 22.48 | ✓ |
| K. Uniqueness | М | .4 | 1 | 8.99 | |
| L. Recreation/Education Potential (bonus points) | Н | .2 | NA | 4.50 | |
| Totals: | | 9.5 | 11 | 213.56 | |
| Percent of Possible Score | | | 86.36 % | | Ľ |

| Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II) Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; or Score of 1 functional point for Uniqueness; or Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; or Percent of possible score > 80% (round to nearest whole #). |
|--|
| Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV) Score of 1 functional point for MT Natural Heritage Program Species Habitat; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish Habitat; or "High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or Score of .9 functional point for Uniqueness; or Percent of possible score > 65% (round to nearest whole #). |
| Category III Wetland: (Criteria for Categories I, II, or IV not satisfied) |
| Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III) "Low" rating for Uniqueness; and Vegetated wetland component < 1 acre (do not include upland vegetated buffer); and Percent of possible score < 35% (round to nearest whole #). |

OVERALL ANALYSIS AREA RATING: (check appropriate category based on the criteria outlined

| ı | II | III | IV |
|----------|----|-----|----|
| <u>-</u> | | | |

MDT Montana Wetland Assessment Form (revised March 2008

| 1. Project name Sc | chrieber Me | eadows | | 2 MDT | project# | NH | 1 27 (021) | | Co | ntrol# | 1027001 |
|--|-------------------|-----------------------------|-----------------|--------------------|-------------|----------------------------|--|-------------------------------------|------------------------------|-------------------------------|---|
| | | | | | | | . , | | | 11001# | 1027001 |
| 3. Evaluation Date 10/ | /8/2021 | 4. Evaluators | R Quir | е | 5. | Wetl | and/Site# (s) | Enhance | ement | | |
| 6. Wetland Location(s): | Т | 27N R 30 | W | Sec1 | 11,12,13 | Т | R | | Sec2 | ! | |
| Approx Stationing or Mil | leposts | Approximately Mil | epost | 53.5 | | | | ' | | | |
| Watershed 1 - Koote | enai | Wa | tershe | ed/Coun | ty Lincoln | ı | | | | | |
| 7. Evaluating Agency | CCI fo | or MDT | | | | | 8. Wetland | size acres | 5 | | 13.22 |
| Purpose of Evaluation | | | | | | | How assess | sed: | Measu | red e.g. | by GPS |
| ☐ Wetlands potentially | y affected | by MDT project | | | | | 9. Assesss | | | | 13.22 |
| ☐ Mitigation Wetlands | s: pre-cons | struction | | | | | (AA) size (a How assess | • | Magau | red e.g. l | hy CDS |
| ✓ Mitigation Wetlands | s: post cor | nstruction | | | | | now assess | seu. | ivicasu | ieu e.g. i | by GF3 |
| Other | | | | | | | | | | | |
| 10. Classification of We | otland and | Aquatic Habitate | in AA | | | | | | | | |
| | | • | III AA | | or (Coword | in\ | Water B | agima | | 0/ of / | ١.٨ |
| HGM Class (Brinson) Slope | | ss (Cowardin) gent Wetland | | WOUTH | er (Coward | 111) | Water R | | | % of A | 58 |
| | | | |] [| | | Seasonal/Ir | | |] [| |
| Slope | | gent Wetland | | | | |] | | | | 20 |
| Slope | Aqua | tic Bed | | | | | Permanent | /Perennial | | | 22 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| 12. General Condition o i. Disturbance: (use mataquatic nuisance vegetat | atrix below to | | Manag | ged in predo | Predo | ominant Land | conditions adjacer | nt to (within 50 t may be | 0 feet of) A | A cultivated or | heavily grazed |
| Condition | ns within AA | | hayed conver | | otherwise | select subject few r | erately grazed or hotively logged; or hect to minor clearing oads or buildings; d or ANVS cover is | nas been ng; contains noxious | placen hydrolo buildin | nent, gradin ogical altera | to substantial fill ig, clearing, or ation; high road or or noxious weed >=30%. |
| AA occurs and is managed in prec grazed, hayed, logged, or otherwis roads or occupied buildings; and r <=15%. | ise converted; | does not contain | lo | w distur | bance | | low disturba | ance | mod | derate d | listurbance |
| AA not cultivated, but may be mod selectively logged; or has been su placement, or hydrological alterati noxious weed or ANVS cover is < | ubject to relativ | vely minor clearing, fill | | modera disturba | | mo | oderate distu | urbance | h | igh dist | urbance |
| AA cultivated or heavily grazed or substantial fill placement, grading, high road or building density; or n >=30%. | g, clearing, or h | nydrological alteration; | hig | gh distur | bance | | high disturb | ance | h | igh dist | urbance |
| Comments: (types of dist | ds are adja | acent to the AA, lan | id is n | | ted, minima | ıl noxi | ous weeds, a | nd low dist | urbance | | |
| ii. Prominent noxious, aq Cirsium arvense and Cen | | | c spe | cies: | | | | | | | |
| iii. Provide brief descript | | | rround | ding land | d use/habit | at | | | | | |
| AA includes existing wetlar and Alopecurus spp. Resto the emergent wetland trans during 2021 site visit. | oration effo | orts and beaver acti | ivity so | outh of S | chrieber La | ke haν | ve resulted in | increased | inundati | on, résul | ting in some of |

B-34

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Is current management preventing (passive) Modified Existing # of "Cowardin" Vegetated Classes in AA Ratino existence of additional vegetated classes? Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture Μ <NO YES> 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA Comments: Aquatic bed, and emergent wetland dominated by primarily reed canary grass. SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT 14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals: i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \odot D \bigcirc S Secondary habitat (list Species) Grizzly bear D S Incidental habitat (list species) S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M 31 .1L 0L Rating USFWS database, MTNHP database shows site is within year-round range of grizzly bear, Sources for reports of use from FWP, USFS, and USFWS. documented use 14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above) i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions): Primary or critical habitat (list species) D
 S Western toad (S2) D S Secondary habitat (list Species) Incidental habitat (list species) D S S No usable habitat ii. Rating (use the conclusions from above and the matrix below to arrive at [check] the functional points and rating)

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

Sources for documented use MTNHP and documented breeding on site by MDT and USFS personnel. Great Blue Heron (S3) observed on site.

| | | | | | | | | | | | | | | | | | | | Subs | stanti | al | | |
|---|-----------------------------|-------------------|-----------------------------|--------------------------|---------------------------|------------------------|--------------------------|------------------|------------------|----------------------|--------------------|------------------|-----------------------|--------------------|--------------------|------------------|------------------|-----------------|------------|----------|------------|-----|-----------|
| ubstantial (base | d on any | of the t | followir | ng [che | :ck]): | | | | | | Minima | al (bas | ed or | n any of | the follo | owing [| check] |): | | | | | _ |
| observations | | | | | | | • • | • | | i) | _ | | | e obser | vations | during | peak ι | ıse pei | riods | | | | |
| abundant wild | llife sign | such a | s scat, | tracks | , nest st | ructure | s, game | e trails, | , etc. | | little | e to no | wildli | fe sign | | | | | | | | | |
| presence of e | extremely | / limiting | g habita | at featu | ures not | availab | ble in th | e surro | ounding | area | spa | rse adj | jacen | t upland | food s | ources | | | | | | | |
| interviews wit | h local b | iologist | s with I | knowle | dge of ti | he AA | | | | | inte | rviews | with | local bio | ologists | with kr | nowled | ge of th | ne AA | | | | |
| loderate (based o | on any o | f the fol | llowing | [check | (]): | | | | | | | | | | | | | | | | | | |
| observations | of scatte | red wild | dlife gro | oups or | r individ | uals or | relative | ly few | species | during p | eak peri | ods | | | | | | | | | | | |
| common occu | urrence o | of wildlif | fe sign | such a | ıs scat, f | tracks, | nest str | ucture | s, game | trails, et | c. | | | | | | | | | | | | |
| adequate adja | acent up | land foo | od sour | rces | | | | | | | | | | | | | | | | | | | |
| interviews wit | h local b | iologist | s with I | knowle | dge of t | he AA | | | | | | | | | | | | | | | | | |
| ii. Wildlife hab from #13. For other in terms of permanent/pere terms]) Structural | class co | over to percer | be control | onside npositi | ered ev ion of tl | enly d | distribu \ (see # | ted, th #10). | he mos Abbrev | t and le viations | ast pre for sur | valent face w | t veg vater | etated duration | l class ons are | es mu e as fo | ist be ollows | within : P/P | 20% o = | f each | | | |
| Structural diversity (see #13) | | | | Hi | gh | | | | | | | Modera | ate | | | | | L | ow | | | | |
| Class cover distribution (all vegetated classes) | | Eve | en | | | Une | ven | | | Even | 1 | | Uneve | | /en | | | E | ven | | | | |
| Duration of surface water in ≥ 10% of AA | P/P | S/I | T/E | А | P/P | S/I | T/E | А | P/P | S/I | T/E | А | P/P | S/I | T/E | Α | P/P | S/I | T/E | А | | | |
| Low disturbance at AA (see #12i) | Е | Е | Е | Н | Е | Е | Н | н | Е | Н | Н | м | Е | Н | М | М | Е | Н | М | М | | | |
| Moderate disturbance at AA (see #12i) | Н | Н | н | н | Н | н | н | М | Н | н | М | М | Н | М | М | L | Н | М | L | L | | | |
| High disturbance at AA (see #12i) | М | М | М | L | М | М | L | L | М | М | L | L | М | L | L | L | L | L | L | L | | | |
| iii. Rating (ı Evidence of v | | | | | | | | and t | the ma | W | low to | | | | rating | g (ii) | | point | s and ı | rating) | | | \exists |
| Substantial | | | + | | Except | | | 十 | | High .9H | | \dashv | | | | derate 8H | 1 | | _ | | Low .7M | 1 | \dashv |
| Moderate | | | | | 1E .9⊦ | | | \vdash | | | | | | | _ | оп 5М | | | | | .7 IVI | | \dashv |
| Minimal | | | + | | .6N | - | | 一 | | .4M | _ | \dashv | | | | 2L | | | | _ | .1L | | \dashv |
| | | | | | .017 | | | | | 114 | | | | | | | | | | _ | | | _ |
| Comments | | tantia least s | | life u | se witl | hin th | e AA; | howe | ever th | iere is | mode | ate tr | affic | use | during | the o | day a | djace | nt to th | ne site | on the | | |
| 4D. General I ould be used estorable due NA here | by fish to hab and pr | [i.e., oceed | fish u onstra d to 14 | use is aints, 4E.) | preclu or is r Colo | uded not de d Wa | by per esired iter | rched from | d culve a mar | ert or ot nageme | her ba | rrier, rspec | etc. tive |]. If th [such | ne AA as fis | is no h ent | t use rappe | dby: | fish, fis | h use | is not | | |
| Duration of surfac in AA | e water | | | P | emaner | nt / Per | ennial | | | | (| Season | al / In | itermittei | nt | | | | Tem | porary / | / Epheme | ral | |
| Aquatic hiding / re | sting/ | | Optim | nal | Ar | dequate | е | Po | or | Opt | imal | | Adeq | uate | | Poor | | Opti | mal | Ade | quate | Po | oor |
| escape cover | | | | | | | _ | 0 | S | 0 | s | C | | S | 0 | 5 | ; | 0 | S | 0 | S | 0 | |
| | timal/ | (| 0 | S | 0 | | S | Ŭ | Ŭ, | | <u> </u> | | | | | | | | Ŭ | | 3 | | |
| Thermal cover op | | | 0 E | .9H | .8H | 1 | - | .6М | .5M | .9Н | .8Н | .71 | и | .6M | .5M | 1 .4 | м | .7М | .6M | .5M | .4M | .3L | + |
| Thermal cover operations of the suboptimal suboptimal FWP Tier I fish: | species Native | 11 | -1 | | | 1 | .7M | - | | | | | - | .6M | .5N | _ | + | 1 | | | 1 1 | | .3 |
| escape cover Thermal cover opi suboptimal FWP Tier I fish: | species Native ecies | .9 | E | .9H | .8Н | 1 . | .7M | .6M | .5M | .9Н | .8Н | .71 | и | | +- | 1 .4 | M M | .7M | .6M | .5M | .4M | .3L | .3 |

| О. | 26 |
|----|------|
| n- | ี.วท |
| | |

.4M

.4M

.4M

.3L

.3L

.2L

.2L

.2L

.2L

.1L

.5M

FWP Non-Game Tier IV

or No fish species

.5M

.5M

.4M

.4M

.3L

.1L

.1L

| Sources used for identifying fish sp. potentially found in AA: | |
|--|--|
| ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-macurrent final MDEQ list of waterbodies in need of TMDL development with lister fishery or aquatic life support, or do aquatic nuisance plant or animal species (syes, reduce score in i above by 0.1: Modified Rating 3.3L | ade structure or activity or is the waterbody included on the differenced uses" including cold or warm water |
| b) Does the AA contain a documented spawning area or other critical habitat fe comments) for native fish or introduced game fish? Y • N If y | ature (i.e., sanctuary pool, upwelling area, etc specify in es, add 0.1 to the adjusted score in i or iia above: |

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

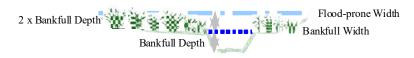
Modifed Rating

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

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

| i. Rating (working from top to bottom, use the m | | | [one only three | , idilotiolia | pointe ana | | | | |
|--|-------------------------------|-------------|-----------------|---------------|--------------|---------|---------------------------|--------|------|
| Estimated or Calculated Entrenchment (Rosgen | Slightly entrenched - C, D, E | | | Moderat | ely entrench | ned – B | Entrenched-A, F, G stream | | |
| 1994, 1996) | S | tream types | 3 | | stream type | | | types | |
| % of flooded wetland classified as forested and/or scrub/shrub | 75% | 25-75% | <25% | 75% | 25-75% | <25% | 75% | 25-75% | <25% |
| AA contains no outlet or restricted outlet | 1H | .9H | .6M | .8H | .7M | .5M | .4M | .3L | .2L |
| AA contains unrestricted outlet | .9H | .8H | .5M | .7M | .6M | .4M | .3L | .2L | .1L |

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



| Floodprone width | 35 | 1 | Bankfull width | 5 = Entrenchment ratio | 7 |
|---------------------|---|------|-------------------|---|------------------|
| | res of wetland in the AA subject to downstream of the AA (check)? | | | nan-made features which may be significantly damaged by | / floods located |
| Comments: | AA inundated from restricte | ed c | utlet, minim | nal trees or shrubs present. | |

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

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

| difficitions 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 | .8Н | .8Н | .6M | .5M | .4M | .3L | .2L |
| Wetlands in AA flood or pond < 5 out of 10 years | .9H | .8H | .7M | .7M | .5M | .4M | .3L | .2L | .1L |

Comments:

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

| . Rating (working from top to be low]) | ottom, use t | he matrix b | oelow to ar | rrive at [check] th | ie runctional po | onies and rading | j [i i – riigri, i | IVI IIIO | |
|--|---|--|---|---|--|---|--|---|---|
| Sediment, nutrient, and toxicant input evels within AA | AA rece to de compou not sub | eliver levels ınds at levels ostantially im | of sediments s such that o paired. Mind | d use with potential ts, nutrients, or other functions are for sedimentation, ants, or signs of | developr nutrients, or with potenti compounds: | ly on MDEQ list on the standard for "probable toxicants or AA all to deliver high such that other fuentation, sources | e causes" rela receives or so levels of sedi nctions are su | ited to se urroundin ments, n ubstantia | diment, g land use utrients, o lly impaire |
| 6 cover of wetland vegetation in AA | > 1 | eutrop 70% | hication pres | esent | | of eutrophi ≥ 70% | cation preser | nt. < 70% | |
| Evidence of flooding / ponding in AA | Yes | No | Yes | No | Yes | No | Yes | | No |
| A contains no or restricted outlet | 1H | .8H | .7M | .5M | .5M | .4M | .3L | T | .2L |
| A contains unrestricted outlet | .9H | .7M | .6M | .4M | .4M | .3L | .2L | | .1L |
| omments: AA nearly 100% v | regetated wit | h reed car | arygrass, | presence of floo | ding/ponding, I | restricted outle | t. | | |
| H Sediment/Shoreline Stabilizat ainage, or on the shoreline of a sta oceed to 14I.) Rating (working from top to botto | inding water b | ody which is | s subject to | wave action. If 14 | H does not apply | /, click N | or man-mad A here and | е | |
| Cover of wetland streambank or | III, doo alo ille | atily bolow to | | f surface water adjace | | | | | |
| oreline by species with stability ratings ≥6 (see Appendix F). | Permane | ent / Perennia | I | Seasonal / Interm | ittent | Temporary / Eph | nemeral | | |
| 65% | 1 | 1H | | .9H | | .7M | | | |
| 55 /6 | | | | | | | | | |
| | | .7M | | .6M | | .5M | | | |
| 5-64% 35% Open water area | s subject to | .3L | n, well veg | .2L | monoculture c | .1L | anarygrass | | |
| Open water area mments: 14I. Production Export/Food C i. Level of Biological Activity (s | nain Support: | .3L wave action | h habitat rat | .2L getated with near | monoculture o | .1L | anarygrass | | |
| Open water area mments: 14I. Production Export/Food Co | nain Support: ynthesis of wil General Wild | .3L wave action | h habitat rat | .2L getated with near | monoculture c | .1L | anarygrass | | |
| Open water area mments: 14I. Production Export/Food C i. Level of Biological Activity (s General Fish Habitat | nain Support: ynthesis of wil | .3L wave action | h habitat rat | .2L getated with near | monoculture o | .1L | anarygrass | | |
| Open water area mments: 14I. Production Export/Food C i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) | nain Support: ynthesis of will General Wild | .3L wave action dlife and fish | h habitat rat | getated with near | monoculture o | .1L | anarygrass | | |
| Open water area omments: 14I. Production Export/Food C i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) E/H M | nain Support: ynthesis of will General Wild | .3L wave action dlife and fish dlife Habita M | h habitat rat | getated with near | monoculture o | .1L | anarygrass | | |
| Open water area mments: 14I. Production Export/Food C i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) E/H M | nain Support: ynthesis of wil General Wild H | .3L wave action dlife and fisl dlife Habita M H | h habitat rat | getated with near | monoculture o | .1L | anarygrass | | |
| Open water area mments: 14I. Production Export/Food Ci i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) E/H M L N/A Rating (Working from top to bott etland component in the AA; Factor dissurface outlet; the final three row ee instructions for further definition | main Support: ynthesis of will General Wild H om, use the m r B = level of b s pertain to du s of these term | .3L wave action dlife and fisl dlife Habita M M M matrix below biological acuration of su | n habitat rat t Rating (14 to arrive at tivity rating ratice water | getated with near | nal points and ra ; Factor C = whe P/P, S/I, and r/E | ating. Factor A = ther or not the A are as previous | acreage of v A contains a y defined, an | regetatec surface d A = "at | or |
| Open water area mments: 14I. Production Export/Food Ci i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) E/H M L N/A Rating (Working from top to bot etland component in the AA; Facto bsurface outlet; the final three row ee instructions for further definition Vegetated component High Moderate | om, use the mr B = level of bs spertain to dus of these term | Multiple and fish diffe and fish diffe Habita Multiple Mu | to arrive at tivity rating race water | getated with near | nal points and ra ; Factor C = whe P/P, S/I, and T/E | ating. Factor A = ther or not the A are as previous | e acreage of v A contains a y defined, an | regetatec surface d d A = "ab lore Low | or osent" |
| Open water area mments: 14I. Production Export/Food C i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) E/H M L N/A Rating (Working from top to bott etland component in the AA; Facto bsurface outlet; the final three row ee instructions for further definition Vegetated component High Moderate Yes No Yes No | main Support: ynthesis of wil General Wild H om, use the m r B = level of b s pertain to du s of these term -5 acres Low Yes | .3L wave action dlife and fisl dlife Habita M M M M matrix below piological ac uration of sul ms].) | to arrive at tivity rating face water | getated with near | nal points and ra; Factor C = whe P/P, S/I, and T/E | ating. Factor A = ther or not the A are as previousl Vegetate: High No Y | acreage of v A contains a y defined, an d component <1 a Moderate | regetatec surface d d A = "at | or esent" |
| Open water area mments: 14I. Production Export/Food Ci i. Level of Biological Activity (s General Fish Habitat Rating (14D.iii.) E/H M L N/A Rating (Working from top to bott etland component in the AA; Factor disburface outlet; the final three row ee instructions for further definition Vegetated component High Moderate Yes No Yes No 1E 7H 8H 55 | om, use the mr B = level of the series Low Yes Low A .6M .4 | .3L wave action dlife and fisl dlife Habita M M M M M M No atrix below biological action of suration of | to arrive at tivity rating face water Vegetat High No 1.6M | getated with near | nal points and ra; Factor C = whe P/P, S/I, and T/E Low es No Y. | ating. Factor A = ther or not the A are as previousl Vegetate: High S No Y BH 6M 6 | acreage of v A contains a y defined, an d component <1 a Moderate es No | regetatec surface d A = "at cre Low Yes | or osent" |
| Open water area Open w | om, use the mr B = level of bus of these term | .3L wave action dlife and fisl dlife Habita M M M M matrix below piological ac uration of sul ms].) | to arrive at tivity rating face water | getated with near | onal points and ra; Factor C = whe P/P, S/I, and T/E Low es No Y 3L 3.4 3.4 3.4 3.4 | ating. Factor A = ther or not the A are as previousl Vegetate: High es No Y BH .6M .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 | acreage of v A contains a y defined, an d component <1 a Moderate | regetatec surface d d A = "at | or osent" No |
| Open water area Omments: 14I. Production Export/Food Ci i. Level of Biological Activity (see instructions for further definition Vegetated component High Noderate Yes No Yes No P 1E 7H 8H 55 | om, use the mr B = level of bus of these term | Multiple and fish diffe and fish diffe Habita M M M M M M M M M M M M M M M M M M M | to arrive at tivity rating race water Vegetat No .5M | getated with near | onal points and ra; Factor C = whe P/P, S/I, and T/E Low es No Y 3L 3.4 3.4 3.4 3.4 | ating. Factor A = ther or not the A are as previousl Vegetate: High es No Y BH .6M .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 | acreage of v A contains a y defined, an d component <1 a Moderate es No SM .4M | regetatec surface d A = "ate Low Yes Low 3.3.1 | or osent" |

| Estimated relative abundance (#11) Low disturbance at AA (#12i) High disturbance at AA (#12i) Comments: AA with common at AB A a known or potential here and proceed to the oii. Check categories that iii. Rating (use the matrix below | water to | table and | perennial surtrix below to arwarm springs d) forested ciation listed ITNHP abundant8H | rface wate rrive at [chec AA doe: cited ra diversity plant ass rare .8H .7M | Wetlands FRC RECHARGING S/I .7M r (2-3 feet) | NA N | T .4M Ad rating) AA doe cited ra | HARGE OR W | n previously ssociations sity (#13) is ate |
|--|---|---|---|---|--|--|-------------------------------------|--|---|
| Insufficient Data/Information AA with shallow 14K. Uniqueness: i. Rating (working from top to be converted abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) AA with commonstance at AA (#12i) Comments: AA with commonstance at AA a known or potential here and proceed to the oil. Check categories that in the commonstance in the commonstance at AA (#12i) 14L. Recreation/Education Potential here and proceed to the oil. Check categories that in the commonstance in the commonstance in the commonstance at AA (#12i) 15. Check categories that in the commonstance in the commonstance in the commonstance at AA (#12i) 16. Check categories that in the commonstance | water to | fen, bog, v (>80 yr-old plant assor 1" by the M commo n .9H | trix below to ar warm springs d) forested ciation listed ITNHP abundant .8H | rface wate rive at [chec AA does cited ra diversity plant ass rare .8H .7M | s/l .7M (2-3 feet) (2-3 feet) (413) is high cociation listed the MTNHP common .6M | nal points ar previously structural or contains as "\$2" by abundant | d rating) AA doe cited ra and str | s not contain re types or a uctural divers low-modera common | n previously ssociations sity (#13) is ate abundant |
| Insufficient Data/Information AA with shallow 14K. Uniqueness: i. Rating (working from top to be considered and potential and proceed to the object of the potential and proceed to the potential an | water to | fen, bog, v (>80 yr-old plant assor 1" by the M commo n .9H | trix below to ar warm springs d) forested ciation listed ITNHP abundant .8H | rive at [chec AA doe: cited ra diversity plant ass rare | .7M (2-3 feet) (k) the function of the stypes and (#13) is high obtain listed the MTNHP common | onal points ar previously structural or contains as "\$2" by abundant | AA doe cited ra and str | s not contain re types or a uctural divers low-modera common | n previously ssociations sity (#13) is ate abundant |
| AA with shallow 14K. Uniqueness: i. Rating (working from top to be concentrated) Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) AA with commoded 14L. Recreation/Education Potential here and proceed to the one ii. Check categories that the iii. Rating (use the matrix below | ontains mature and or p as "S1" | fen, bog, v (>80 yr-old plant assor 1" by the M commo n .9H | trix below to ar warm springs d) forested ciation listed ITNHP abundant8H | rive at [chec AA doe: cited ra diversity plant ass rare | k) the functions not contain pre types and #13) is high ociation listed the MTNHP common | onal points ar previously structural or contains as "\$2" by abundant | AA doe cited ra and str | re types or as uctural divers low-modera common | ssociations sity (#13) is ate abundant |
| 14K. Uniqueness: i. Rating (working from top to be replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: AA with common at the relative and proceed to the oil. Check categories that Other iii. Rating (use the matrix below | ontains mature and or p as "S1" | fen, bog, v (>80 yr-old plant assor 1" by the M commo n .9H | warm springs d) forested ciation listed fTNHP abundant .8H .7M | rive at [chec AA doe: cited ra diversity plant ass rare | k) the functions not contain pre types and #13) is high ociation listed the MTNHP common | previously structural or contains I as "S2" by abundant | AA doe cited ra and str | re types or as uctural divers low-modera common | ssociations sity (#13) is ate abundant |
| Replacement potential or wetle Estimated relative abundance (#11) Low disturbance at AA (#12i) High disturbance at AA (#12i) omments: AA with common 14L. Recreation/Education Pote i. Is the AA a known or potentia here and proceed to the o ii. Check categories that Other iii. Rating (use the matrix below | mature and or p as "S1 re | (>80 yr-old plant assod 1" by the M commo n .9H | d) forested ciation listed ITNHP abundant8H | cited ra diversity plant ass rare | re types and (#13) is high obciation listed the MTNHP common | structural or contains as "S2" by abundant | cited ra and str | re types or as uctural divers low-modera common | ssociations sity (#13) is ate abundant |
| abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: AA with common AA with common AA a known or potentia here and proceed to the oii. Check categories that Other iii. Rating (use the matrix below | Н | .9H | .8H | .8H | .6M | .5M | .5M | .4M | .3L |
| (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: AA with common at AA with common at AA and a known or potentian here and proceed to the one ii. Check categories that the common at AA and a known or potentian here and proceed to the one and | Н | .8H | .7M | .7M | | | | | |
| AA (#12i) High disturbance at AA (#12i) Comments: AA with common and the common | | _ | | | .5M | .4M | 4M | .3L | .2L |
| (#12i) AA with common 14L. Recreation/Education Pote i. Is the AA a known or potentia here and proceed to the o ii. Check categories that Other iii. Rating (use the matrix below | | .7H | 0.4 | 0.41 | | | . 1101 | | |
| 14L. Recreation/Education Pote i. Is the AA a known or potentia here and proceed to the o ii. Check categories that Other iii. Rating (use the matrix below | | | .6M | .6M | .4M | .3L | .3L | .2L | .1L |
| | rec./ed/ rerall su | d. site: (chummary ar | heck) Y nd rating page) Education | N ○) nal/scientific | (if 'Yes' cont | tinue with the | evaluation | | click NA |
| Known or Potential Recreation or Educ | | | | | | | ŀ | Known P | otential |
| Public ownership or public easemen | | | <u> </u> | | uíred) | | | .2H | .15H |
| Private ownership with general publi | c access | s (no permi | ission required) | | | | | .15H | .1M |
| Private or public ownership without | jeneral į | public acce | ess, or requiring | permission | for public acce | ess | | .1M | .05L |
| Comments: | | | | | | | | | |
| Known recreation at site. | | | | | | | | | |
| General Site Notes | | | | | | | | | |

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

| Function & Value Variables | Rating | Actual Functional Points | Possible Functional Points | Functional Units: (Actual Points x Estimated AA Acreage) | Indicate the four most prominent functions with an asterisk (*) |
|--|--------|--------------------------------|----------------------------------|--|---|
| A. Listed/Proposed T&E Species Habitat | Н | .8 | 1 | 10.58 | V |
| B. MT Natural Heritage Program Species Habitat | Н | .9 | 1 | 11.90 | |
| C. General Wildlife Habitat | Е | 1 | 1 | 13.22 | |
| D. General Fish Habitat | L | .3 | 0 | 3.97 | |
| E. Flood Attenuation | М | .6 | 1 | 7.93 | |
| F. Short and Long Term Surface Water Storage | Н | 1 | 1 | 13.22 | Y |
| G. Sediment/Nutrient/Toxicant Removal | Н | 1 | 1 | 13.22 | ✓ |
| H. Sediment/Shoreline Stabilization | Н | 1 | 1 | 13.22 | |
| Production Export/Food Chain Support | Н | .9 | 1 | 11.90 | > |
| J. Groundwater Discharge/Recharge | Н | 1 | 1 | 13.22 | |
| K. Uniqueness | М | .4 | 1 | 5.29 | |
| L. Recreation/Education Potential (bonus points) | Н | .2 | NA | 2.64 | |
| Totals: | | 9.1 | 10 | 120.30 | |
| Percent of Possible Score | | T- | 91 % | | |

| Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II) Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; or Score of 1 functional point for Uniqueness; or Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; or Percent of possible score > 80% (round to nearest whole #). |
|--|
| Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV) Score of 1 functional point for MT Natural Heritage Program Species Habitat; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish Habitat; or "High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or Score of .9 functional point for Uniqueness; or Percent of possible score > 65% (round to nearest whole #). |
| Category III Wetland: (Criteria for Categories I, II, or IV not satisfied) |
| Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III) "Low" rating for Uniqueness; and Vegetated wetland component < 1 acre (do not include upland vegetated buffer); and Percent of possible score < 35% (round to nearest whole #). |

OVERALL ANALYSIS AREA RATING: (check appropriate category based on the criteria outlined

| ı | II | III | IV |
|----------|----|-----|----|
| <u>-</u> | | | |

MDT Montana Wetland Assessment Form (revised March 2008

| 1. Project name Schrie | eber Meadows | 2 | 2. MDT project# | NH | 27 (021) | | Cont | rol# | 027001 |
|---|---|--|-------------------------|------------------------------------|--|----------------------|---|--------------------|--|
| 3. Evaluation Date 10/8/2 | 021 4. Evaluators F | R Quire | 5. | Wetl | and/Site# (s) | Restorat | on | | |
| 6. Wetland Location(s): T Approx Stationing or Milepo | | 0W lilepost | Sec1 11,12,13 | Т | R | | | | |
| Watershed 1 - Kootenai | | | d/County Lincoln | 1 | | | | | |
| 7. Evaluating Agency | CCI for MDT | | | | 0 14/ // 1 | | | | 0.40 |
| | OOI IOI IVID I | | | | 8. Wetland | | | | 3.46 |
| Purpose of Evaluation | footod by MDT was out | | | | How assess | | Measure | asured e.g. by GPS | |
| | | | | | Assesssn (AA) size (ac | | | | 3.46 |
| ☐ Mitigation Wetlands: pr | | | | | How assess | ed: | Measure | d e.g. by | GPS |
| ✓ Mitigation Wetlands: po | ost construction | | | | | | | | |
| Other | | | | | | | | | |
| 10. Classification of Wetlar | nd and Aquatic Habitats | in AA | | | | | | | |
| HGM Class (Brinson) | Class (Cowardin) | | Modifier (Coward | in) | Water Re | egime | | % of AA | |
| Depressional | Aquatic Bed | | Excavated | | Permanent/F | Perennial | | | 35 |
| Depressional | Emergent Wetland | | Excavated | | Seasonal/Int | termittent | | | 30 |
| Depressional | Emergent Wetland | | Excavated | | Permanent/F | Perennial | | | 35 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 11. Estimated Relative Abur12. General Condition of A. i. Disturbance: (use matrix I aquatic nuisance vegetation | A below to determine [circle] ap | ppropriat | te response – see inst | truction | ns for Montana-li | sted noxiou | s weed and | d | |
| | | | | | conditions adjacent | _ | | | |
| Conditions wit | thin AA | natural state; is not grazed, mod hayed, logged, or otherwise sele converted; does not contain subj roads or buildings; and noxious few | | mode select subject few r | and not cultivated, but may be oderately grazed or hayed or electively logged; or has been bject to minor clearing; contains w roads or buildings; noxious eed or ANVS cover is <=30%. | | Land cultivated or heavily graze or logged; subject to substantial placement, grading, clearing, or hydrological alteration; high roabuilding density; or noxious wee or ANVS cover is >=30%. | | substantial fill clearing, or on; high road or noxious weed |
| AA occurs and is managed in predomit grazed, hayed, logged, or otherwise concads or occupied buildings; and noxic <=15%. | onverted; does not contain | low | v disturbance | | low disturba | moderate disturbance | | | |
| AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=30%. | | | moderate disturbance | mo | oderate distu | hig | high disturbance | | |
| AA cultivated or heavily grazed or logged; subject to relatively | | | high disturbance | | high disturbance | | hig | high disturbance | |
| Comments: (types of disturk Highway 2 and USFS roads a | pance. intensity. season are adjacent to the AA, lan | n. etc) nd is no | ot cultivated, minima | ıl noxi | ous weeds, an | d low dist | ırbance. | | |
| ii. Prominent noxious, aquat | ic nuisance, other exoti | ic spec | ies: | | | | | | |
| Cirsium arvense, Leucanthem | | | | | | | | | |
| iii. Provide brief descriptive The AA includes pre-existing vand provide a greater diversity | vetlands identified within t | the proj | ject area that were r | | ed by excavati | on to incre | ease the g | roundwa | ter availability |
| | , | , | • | | | | | | |

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Modified Is current management preventing (passive) existence of additional vegetated classes? Existing # of "Cowardin" Vegetated Classes in AA Ratino Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture М <NO YES> 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA L Comments: Emergent and aquatic bed classes SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT 14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals: i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \odot D \bigcirc S Secondary habitat (list Species) Grizzly bear D S Incidental habitat (list species) S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M .3L .1L 0L Rating USFWS database, MTNHP database shows site is within year-round range of grizzly bear, Sources for reports of use from FWP, USFS, and USFWS. documented use 14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above) i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions): Primary or critical habitat (list species) Western toad (S2) D S Secondary habitat (list Species) Incidental habitat (list species) D S S No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None S1 Species: Functional Points and .7M .2L 0L 1H .8H .6M .1L Rating S2 and S3 Species: Functional Points and .7M .6M .5M .2L 0L .9H .1L Rating

| | | | • | • | • | |
|----------------------------|-----------------|----------------|---------------------|-------------------|---|--|
| Sources for documented use | MTNHP and docum | ented breeding | g on site by MDT ar | nd USFS personnel | I | |

| | | | | | | | | | | | | | | | | | | | Subs | stantia | al | | |
|---|-----------------------------------|-----------------------------|-------------------------------|--------------------------|----------------------|-------------------|-----------------------|---------------------|--------------------|-----------------------|---|------------------|---------------------------|------------------------------|----------------------------|-------------------|-------------------|---------------------|---------------|-------------|-------------|----------|----|
| bstantial (based | • | | • | ٠. | | | | | | | | • | | | of the follo | | | • | _ | | | | |
| observations | | | | | • | | • ` | • | | i) | few or no wildlife observations during peak use periods | | | | | | | | | | | | |
| abundant wild | • | | | | | | | | | | = | | no wildlit | • | | | | | | | | | |
| presence of ex | - | - | - | | | | | e surro | unding ? | area | | | - | | d food so | | | | | | | | |
| interviews with | າ local bio | logists | s with k | .nowled | dge of th | ne AA | | | | | inf | terviev | ws with | local bid | iologists | with kr | nowledo | ge of th | e AA | | | | |
| oderate (based o | - | | | | | luals or | r relative | ly few | species | ; during | peak pe | eriods | | | | | | | | | | | |
| common occu | ırrence of | wildlife | e sign s | such a | ıs scat, f | tracks, | nest str | ucture [,] | s, game | trails, e | etc. | | | | | | | | | | | | |
| adequate adja | acent upla | and foo | od sourc | ces | | | | | | | | | | | | | | | | | | | |
| interviews with | ก local bic | ologists | s with k | nowle | dge of t | he AA | | | | | | | | | | | | | | | | | |
| i. Wildlife habi from #13. For co other in terms of permanent/pere erms]) | class cov | ver to percent | be cont | onside positi | ered ev ion of th | venly d the AA | distribut A (see # | ited, th #10). | he most Abbrev | st and le viations | least pr s for su | revale urface | ent veg e water | getated r duration | d class ions are | ses mu e as fo | ust be follows: | within s: P/P = | 1 20% of = | of each | | | |
| Structural liversity (see ±13) | | | | Hiç | gh | | | | | | | Mode | lerate | | | _ | | L¢ | .ow | | | | |
| Class cover distribution (all regetated classes) | | Even | n | | | Une | ven | | | Eve | ∍n | | | Une | ven | | | Ev | ven | | | | |
| Ouration of urface water in ≥ 0% of AA | P/P | S/I | T/E | А | P/P | S/I | T/E | А | P/P | S/I | T/E | А | P/P | S/I | T/E | А | P/P | S/I | T/E | A | | | |
| ow disturbance at AA (see #12i) | Е | Е | Е | н | Е | Е | Н | н | Е | Н | Н | м | E | Н | М | М | Е | Н | М | м | | | |
| Moderate disturbance at AA see #12i) | н | н | н | н | Н | н | Н | М | Н | н | М | м | н | М | М | L | Н | М | L | L | | | |
| High disturbance at AA (see #12i) | М | М | м | | М | М | | | М | М | | | м | L | L | | 1 | | | | | | |
| iii. Rating (u Evidence of w | | | | | | | | and f | the ma | W | Vildlife | | | | s rating | g (ii) | | points | s and r | rating) | | | _ |
| Substantial | | | + | | Except | | | \vdash | | High | | | + | | | derate | e I | | 4 | | Low | _ | _ |
| | | | | | 1E | <u>:</u> | | 4_ | | .9⊦ | 1 | | | | | .8H | | | 4 | / | .7M | 4 | _ |
| Moderate | | | | | .9H | 1 | | L | | .7N | M | | | | | .5M | | | | | .3L | <u> </u> | _ |
| Minimal | | | | | .6M | 1 | | 1 | | .4N | M | | | | | .2L | | | | | .1L | | |
| omments | Good | habit | at div | /ersit | y with | subs | tantial | wild | llife evi | dence |). | | | | | | | | <u> </u> | <u> </u> | | | _ |
| 4D. General F build be used b estorable due t NA here a | by fish [to habit and prod | [i.e., f tat co oceed | fish us onstrai d to 14 | use is aints, 4E.) | preclu or is n | uded I not de | by per esired | rched from | d culve ı a man | ert or o nagem | other b | barrie erspe | er, etc. ective | c.]. If the such | the AA n as fis | is no sh ent | ot used trappe | ed by fi ed in a | fish, fis | sh use | e is not | | _ |
| | | | | | | | | | | $\overline{\Gamma}$ | | | | | | | | | Ter | | / Ephemer | ral | Ī |
| Duration of surface | | | | De | | 4.1 Dere | -ninl | | | - | | ,,,JGC' | / h. | W+U III- | unt . | | | | 1 | (DOI'd) v . | / Eblienne. | (a) | |
| Duration of surface in AA Aquatic hiding / res escape cover | sting / | | Optima | | ermanen Ad | nt / Pere | | Pod | or | Op | ptimal | Seas | Adeqi | | | Poor | | Optin | | | equate | Po | DC |
| in AA Aquatic hiding / res | | 0 | | | | Adequate | | Poo | oor S | Op: | ptimal S | | | | | i | s | Optin O | | | | | 'n |

| . Habitat Quality and | IXIIO WII | Ouspec | teu i isi | Opecie | , 3 III A | 4 (400 i | ilutiik to | arnivo a | t lo Hook i | tho lumbe | ionai po | into and | i racing) | | | | | |
|--|-----------|-----------------------|-----------|--------|-----------|----------|------------|----------|-------------|------------|----------|----------|-----------------------|-----|------|-------|-----|-----|
| Duration of surface water in AA | | Permanent / Perennial | | | | | | Se | easonal / I | ntermitten | t | | Temporary / Ephemeral | | | | | |
| Aquatic hiding / resting / escape cover | Opt | imal | Adeq | uate | Po | oor | Opti | mal | Ade | quate | Po | or | Opti | mal | Adeo | quate | Po | oor |
| Thermal cover optimal/ suboptimal | 0 | S | 0 | S | 0 | S | 0 | S | 0 | s | 0 | S | 0 | S | 0 | S | 0 | S |
| FWP Tier I fish species | 1E | .9H | .8H | .7M | .6M | .5M | .9H | .8H | .7M | .6M | .5M | .4M | .7M | .6M | .5M | .4M | .3L | .3L |
| FWP Tier II or Native Game fish species | .9H | .8H | .7M | .6M | .5M | .5M | .8H | .7M | .6M | .5M | .4M | .4M | .6M | .5M | .4M | .3L | .2L | .2L |
| FWP Tier III or Introduced Game fish | .8H | .7M | .6М | .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 four ii. Modified Rating (NOTE: Modified score can a) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of 7 fishery or aquatic life support, or do aquatic nuisar yes, reduce score in i above by 0.1: Modified F | not exceed culvert, dik TMDL deve nce plant o | e, or other melopment with | an-made s listed "Pr | structure or obable Imp | aired Úses' | ' including | cold or w | arm water | ne If | |
|--|--|------------------------------------|-------------------------|----------------------------|--|-----------------------|-----------------|--------------------|-------------|-------------------|
| b) Does the AA contain a documented spawning a comments) for native fish or introduced game fish? | _ | er critical hab ' • N | | • | he adjusted | | | | | |
| iii. Final Score and Rating: 0 NA | Commen | ts: No fish | habitat i | dentified | within re | storatio | n AA | | | |
| 14E. Flood Attenuation: (Applies only to wetlan channel or overbank flow, click NA here | | t to flooding ved to 14F.) | ria in-chan | nel or over | bank flow. I | f wetland | s in AA ar | e not floode | ed from in- | |
| i. Rating (working from top to bottom, use the m Estimated or Calculated Entrenchment (Rosgen | | v to arrive at entrenched - | | | points and ely entrench | | Entrono | hed-A, F, G | etream | |
| 1994, 1996) | | stream types | | | stream type | ieu – b | Lintello | types | Stream | |
| % of flooded wetland classified as forested and/or scrub/shrub | 75% | 25-75% | <25% | 75% | 25-75% | <25% | 75% | 25-75% | <25% | |
| AA contains no outlet or restricted outlet | 1H | .9H | .6M | .8H | .7M | .5M | .4M | .3L | .2L | |
| AA contains unrestricted outlet | .9H | .8H | .5M | .7M | .6M | .4M | .3L | .2L | .1L | |
| Slightly Entrenched | | Moderately I | Entronchod | | | | ntrenched | | | 7 |
| ER = >2.2 | | ER = 1.4 | 11 – 2.2 | | | ER | = 1.0 - 1.4 | | | _ |
| C stream type D stream type E stream ty | ype | B strea | m type | A | stream type | | stream typ | e G | stream type | 1 |
| | | | | | | | | | | |
| Floodprone width ii. Are ≥10 acres of wetland in the AA subject to fl within 0.5 mile downstream of the AA (check)? Comments: All wetland cells subject to fl | / Bankf width looding AN Y () | Bankfull Do full ID are man-n N | nade featu | res which i | Bank 5 = | Entreno ratio | h | 7 oy floods loo | cated | |
| 14F. Short and Long Term Surface Water upland surface flow, or groundwater flow. If 14G.) i. Rating (Working from top to bottom, user water durations are as follows: P/P = permaturther definitions of these terms].) Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic | f no wetla | inds in the A | AA are su arrive at | bject to fle [check] th | ooding or posterional transfer of the second | oonding, al points | dick [and ratir | NA here | and proce | eed to surface |
| flooding or ponding Duration of surface water at wetlands within the AA | | 1 | | | | Т | | | 1 | |
| | P/P | S/I | T/E | P/F | | S/I | T/E | P/P | S/I | T/E |
| Wetlands in AA flood or pond ≥ 5 out of 10 years | 1H | .9H | .8H | .8 | | 6M | .5M | .4M | .3L | .2L |
| Wetlands in AA flood or pond < 5 out of 10 years | .9H | .8H | .7M | .7 | М . | 5M | .4M | .3L | .2L | .1L |

Comments: AA with evidence of frequent flooding.

| 14G. Sediment/Nutrient/Toxican through influx of surface or ground to 14H.) | | | | |
|---|--|---|--|--|
| i. Rating (working from top to bot = low]) | tom, use the matrix below | to arrive at [check] the f | unctional points and rating [F | I = high, M = moderate, or L |
| Sediment, nutrient, and toxicant input levels within AA | AA receives or surroundin to deliver levels of sec compounds at levels such not substantially impaire sources of nutrients or eutrophicatic | liments, nutrients, or that other functions are d. Minor sedimentation, toxicants, or signs of | Waterbody on MDEQ list of w development for "probable ca nutrients, or toxicants or AA rec with potential to deliver high lev compounds such that other funct Major sedimentation, sources of of eutrophicat | uses" related to sediment, eives or surrounding land use els of sediments, nutrients, or ions are substantially impaired. nutrients or toxicants, or signs |
| % cover of wetland vegetation in AA Evidence of flooding / ponding in AA | ≥ 70% Yes No | < 70% Yes No | ≥ 70% Yes No | < 70% Yes No |
| AA contains no or restricted outlet | | 7M .5M | .5M .4M | .3L .2L |
| AA contains unrestricted outlet | .9H .7M | .6M .4M | .4M .3L | .2L .1L |
| Comments: AA receives periodic | c overflow from Coyote Cr | eek | | |
| 14H Sediment/Shoreline Stabilization drainage, or on the shoreline of a stand proceed to 14l.) i. Rating (working from top to bottom, | ling water body which is subj | ect to wave action. If 14H d | oes not apply, click NA h | man-made ere and |
| % Cover of <u>wetland</u> streambank or shoreline by species with stability ratings | | tion of surface water adjacent to | | |
| of ≥6 (see Appendix F). | Permanent / Perennial | Seasonal / Intermitten | 1 | eral |
| ≥ 65% 35-64% | .7M | .9H .6M | .7M | |
| < 35% | .3L | .2L | .1L | |
| 14I. Production Export/Food Chai i. Level of Biological Activity (synt | | itat ratings [check]) | | |
| General Fish Habitat G Rating (14D.iii.) E/H | eneral Wildlife Habitat Rati | ng (14C.iii.) | | |
| E/H H | Н Н | M | | |
| М | М | М | | |
| L M | М | L | | |
| N/A H | M | L | | |
| ii. Rating (Working from top to bottom wetland component in the AA; Factor B subsurface outlet; the final three rows p see instructions for further definitions or | s = level of biological activity opertain to duration of surface of these terms].) | rating from above (14I.i.); Fa water in the AA, where P/P, | ctor C = whether or not the AA of S/I, and T/E are as previously d | contains a surface or efined, and A = "absent" |
| A Vegetated component >5 a B High Moderate C Yes No Yes No | Low High Yes No Yes N | | | mponent <1 acre derate Low No Yes No |
| P/P 1E .7H .8H .5M | .6M .4M .9H .6I | | .3L 8H .6M .6M | .4M .3L .2L |
| S/I .9H .6M .7H .4M | .5M .3L 8H .5I | | .2L .7H .5M .5M | .3L .3L .2L |
| T/E/A .8H .5M .6M .3L | .4M .2L .7H .4I | .5M .2L .3L | .1L .6M .4M .4M | .2L .1L |
| iii. Modified Rating (NOTE: Modified plant cover, ≤ 15% noxious weed or ANV control). a) Is there an average ≥ 50 foot-wide veg to the score in ii above and adjust rating | S cover, and that is not subjugetated upland buffer around accordingly: Modified Ra | ected to periodic mechanica > 75% of the AA circumfere | I mowing or clearing (unless for nice? Y • N · If you | |

| Inflicient Data/Information NA | The Ah is a slope watend | | | J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) | | | | | | | |
|--|---|--|--|---|--|---|-----------------|----------------------------|---|---------------------------------|----------------|
| The Ah is a slope wetter and provided the prevention of the provided provided contains limited to not underlying impeding layer Syrings or seeps are known or observed Vegetation growing during domain teason drought Wetland occase in the tree of a natival slope. Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland occase in the tree of a natival slope. Wetland occase in the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no intel Shallow water table and the slie is saturated to the surface. Other: Diversion of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM TH | The Ah is a slope watend | | | | | | | | Indicators | i | |
| Vegetation growing during domant season-forcupit Steam is a known "losing" stream; discharge volume decreases Wetland occurs at the toe of a natural slope Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no intel Shallow water table and the site is saturated to the surface Other: | Vegetation growing during domaints seanchforught Wetland occurs at the too of a natural slope Seeps are present at the wetland edge AA permannity fooded during drought periods Wetland occurs an outlieb, but no intel Shallow water table and the site is a durated to the surface Other: Continued the site is a durated to the surface | The AA is a slope we | etland | | ı | Perm | neable substra | ate present v | without underl | ying impeding | layer |
| Welland coras at the ton of a natural slope Serge are present at the welland dopp AA permanenty flooded during drought periods Welland contains an outlet, but no litest Shallow water table and the sile is a saturated to the surface Other: Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wellands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT SRCHARGING THE GROUNDWATER SYSTEM PIP SI T None Undewster Discharge or Recharge 11 None Indewster Discharge or Recharge 12 No contain provided the strip of | Wetland occurs at the toe of a natural slope An permanently flooded during drought periods Wetland contains an outlet, but no linet Shallow waster table and the site is a sturated to the surface Other: Consumptive table | Springs or seeps are | known or obse | rved | | Wetla | and contains | inlet but no | outlet | | |
| Seeps are present at the welfand edge AA permanently flooded during drought periods Welfand contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: Presentation of asturation at AA Welfands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT'S RECHARGING THE GROUNDWATER SYSTEM PP | Seeps are present at the welland edge AA permanently flooded during drought periods Welland contains an outlet, but no intel Shallow water table and the site is a sturated to the surface Other: Content | Vegetation growing of | during dormants | season/dro | ught | Strea | am is a known | ı 'losing' stre | eam;discharg | e volume decr | eases |
| Ap permanently flooded during drought periods Welstand contains an outlet, but no triefet Shallow water table and the site is saturated to the surface Other: Shallow water table and the site is saturated to the surface Other: | AA permanently flooded during drought periods Wetland contrains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: Stating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER TIMAT IS RECHARGING THE GROUNDWATER SYSTEM Pip Sit None | Wetland occurs at the | e toe of a natura | al slope | | Othe | r: | | | | |
| Shallow water table and the site is saturated to the surface Other: Characteristic | Wetland contains an outlet, but no inlet Shallow water table and the site is a sturated to the surface Other: Shallow water table and the site is a sturated to the surface Other: | Seeps are presentat | t the wetland ed | ge | | | | | | | |
| Shillow water table and the site is saturated to the surface Other: Other: | Shelling water table and the site is a surrated to the surface Officer: Cating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetands FROM GROUNDWATER DISCHARGE OF WITH WATER THAT IS RECHARGENG THE GROUNDWATER SYSTEM PP | AA permanently floor | ded during drouç | ght periods | S | | | | | | |
| Rating (use the information from I and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM PIP SI T None III JUNIQueness: Rating (vorking from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 y-old) forested wetland or plant association listed as "SY" by the MTNHP mated relative wetland or plant association listed as "SY" by the MTNHP mated relative frare common abundant rare solutions and structural diversity (#13) is high or contains previously cited rare types and structural diversity (#13) is high or contains plant association listed as "SY" by the MTNHP mated relative frare common abundant rare solutions and structural diversity (#13) is high or contains previously cited rare types and structural diversity (#13) is high or contains plant association instead as "SY" by the MTNHP mated relative frare common abundant rare solutions and structural diversity (#13) is high or contains plant structural diversity (#13) is high or contains plant association instead as "SY" by the MTNHP mated relative frare common abundant rare common abundant r | Check the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AN Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM PP | Wetland contains an | Wetland contains an outlet, but no inlet | | | | | | | | |
| Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wedlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT'S RECHARGING THE GOLDINOW ATER STATEM PP SI T None ITHAT'S RECHARGING THE GOLDINOW ATER STATEM PP SI T None ITHAT'S RECHARGING THE GOLDINOW ATER STATEM NA Uniqueness: Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fan, bog, warm spring or mature (=80 y-rold) frosteted welfand or plant association isted for contains and structural diversity (#13) is indicated the plant association listed as "S" by the MTNHP Imated relative mater and the plant association listed as "S" by the MTNHP Imated relative mater and the plant association listed as "S" by the MTNHP Imated relative material and the plant association listed as "S" by the MTNHP Imated relative material and the plant association listed as "S" by the MTNHP Imated disturbance at AA | tating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Westanda Room Septonulwater Risk Recharge Of With WATER THAT IS RECHARGING THE ROOM/DWATER RISK-HARGE OF WITH WATER THAT IS RECHARGING THE ROOM/DWATER SYSTEM PP Sit T None Individual State of the State | Shallow water table a | and the site is sa | aturated to | the surface | | | | | | |
| Duration of saturation at AA Wellands FROM ROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE ROUNDWATER SYSTEM P.P.P. S. T. None Indicated P.P.P. S. T. None Indicated Data/Information NA Intents: Perennial spring located near AA I. Uniqueness: Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fen. bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association isted as "\$2" by the MTNHP Imated relative nation of plant association isted as "\$2" by the MTNHP Imated relative nation of plant association nation and structural adversity (#13) is light or an adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural association association and structural association associat | Duration of saturation at AA Wetlands RROM RROM RROM RROW TER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM PIP Still T | Other: | | | | | | | | | |
| Duration of saturation at AA Wellands FROM ROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE ROUNDWATER SYSTEM P.P.P. S. T. None Indicated P.P.P. S. T. None Indicated Data/Information NA Intents: Perennial spring located near AA I. Uniqueness: Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fen. bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association isted as "\$2" by the MTNHP Imated relative nation of plant association isted as "\$2" by the MTNHP Imated relative nation of plant association nation and structural adversity (#13) is light or an adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural association association and structural association associat | Duration of saturation at AA Wetlands RROM RROM RROM RROW TER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM PIP Still T | | | | | | | | | | |
| Duration of saturation at AA Wellands FROM ROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE ROUNDWATER SYSTEM P.P.P. S. T. None Indicated P.P.P. S. T. None Indicated Data/Information NA Intents: Perennial spring located near AA I. Uniqueness: Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fen. bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$1" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association listed as "\$2" by the MTNHP Imated relative nation of plant association isted as "\$2" by the MTNHP Imated relative nation of plant association isted as "\$2" by the MTNHP Imated relative nation of plant association nation and structural adversity (#13) is light or an adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural adversity (#13) is light or common abundant association and structural association association and structural association associat | Duration of saturation at AA Wetlands RROM RROM RROM RROW TER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM PIP Still T | | | | | | | | | | |
| THAT IS RECHARGING THE CROUNDWATER SYSTEM P/P S/II T None undwater Discharge or Recharge IH 7/M 4/M 1.1L Max | THAT IS RECHARGING THE GROUNDWATER SYSTEM Pip | . Rating (use the inform | nation from i an | | | | | | | | |
| Indiqueness: Attiniqueness: | Indicated DataInformation MA Uniqueness: Alting (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 y-cold) forested welland or plant association listed as '\$2" by the MTNHPP and the data feature datance (#11) disturbance at AA 1H | | | | Duration of sat | | | | | | TH WATER |
| Inflicient Data/Information NA | Indiqueness: ### Addes not contain previously clied rare types and structural diversity (#13) is plant association listed as "S2" by the MTNIP association listed das "S2" by the MTNIP disturbance at AA 1H 9H 8H 7M 5M 5M 5M 5M 5M 3L 2L 1L ordisturbance at AA 3H 7H 6M 6M 6M 4M 3L 3L 2L 1L ordisturbance at AA 3H 7H 6M 6M 7M 7M 5M 4M 3L 3L 2L 1L ordisturbance at AA 3H 7H 6M 7M 6M 7M 5M 6M 7M 7M 6M 7M 6M 7M 6M 7M | | | | | ITIALIS | RECHARGING | THE GROU | NUWATER ST | <u>STEIVI</u> | |
| Iments: Perennial spring located near AA A contains fen, bog, warm springs or mature (>80 y-cold) forested wetand or plant associations listed as "\$2" by the MTNHP mated relative no no abundant rare commo abundant rare comm | Indiqueness: ating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association isted as "S2" by the MTNHP clear as "S2" by the MTNHP rested relative as "S1" by the MTNHP rested relative as "S2" by the MTNHP rested relative rested relative relations relative section as "S2" by the MTNHP rested relative rested relative relations as a disturbance at the stime. **Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) **The AA a known or potential rec./ed. site: (check) Y | teria | | | P/P | | S/I | | T | No | ne |
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| or mature (>80 yr-old) forested wetland or plant association listed as "\$2" by the MTNHP in M | or mature (>80 yr-old) forested wetland or plant association listed as "\$2" by the MTNHP anated relative rare commo abundant | | AA contains | fen, bog, v | varm springs | | | | AA does | s not contain p | oreviously |
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| ndance (#11) v disturbance at AA 1H | disturbance at AA 1H 9H 8H 7M 7M 5M 4M 3L 2L disturbance at AA 3H 7H 6M 6M 6M 4M 3L 3L 2L 1L disturbance at AA 3H 7H 6M 6M 6M 4M 3L 3L 2L 1L 3H 6H 7H 6M 6M 6M 4M 3L 3L 2L 1L 1L 6H 6H 7H 6H | | | | | | 1 | 1 | | | |
| disturbance at AA 2) ABH | disturbance at AA | | rare | | abundant | rare | common | abundant | rare | common | abundant |
| derate disturbance at (#12i) h disturbance at A | rerate disturbance at 9H .8H .7M .7M .5M .4M .4M .3L .2L .1L | , , | | n | | | | | | | |
| derate disturbance at .9H .8H .7M .7M .5M .4M .4M .3L .2L | erate disturbance at .9H .8H .7M .7M .5M .4M .4M .3L .2L .2L .4D .3L .3L .2L .4D .3L .3L .2L .4D .3D .3D .3L .2L .4D .3D .3D .3D .3D .3D .3D .3D .3D .3D .3 | | 1H | .9H | .8H | .8H | .6M | .5M | .5M | .4M | .3L |
| (#12i) h disturbance at AA 2i) BH .7H .6M .6M .4M .3L .3L .2L .1L Imments: Site was moderately disturbed before a after construction but has low disturbance at this time. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) the AA a known or potential rec./ed. site: (check) Y ● N (if 'Yes' continue with the evaluation; if 'No' then click | disturbance at AA | , | 011 | 61.1 | 71.4 | | | | | +' | 6. |
| Site was moderately disturbed before a after construction but has low disturbance at this time. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) the AA a known or potential rec./ed. site: (check) Y | ments: Site was moderately disturbed before a after construction but has low disturbance at this time. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) the AA a known or potential rec./ed. site: (check) Y ● N | oderate disturbance at | | Hö. | . / IVI | ./IM | .5M | .4M | .4M | .3L | .2L |
| Interests: Site was moderately disturbed before a after construction but has low disturbance at this time. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) | Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) the AA a known or potential rec./ed. site: (check) Y | A (#12i) | .9П | .71VI .71VI .71VI .71VI .71VI .71VI .71VI | | | | | | | |
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| the AA a known or potential rec./ed. site: (check) Y | the AA a known or potential rec./ed. site: (check) Y | (#12i) gh disturbance at AA 2i) | .8H | | | | | | | | .1L |
| the AA a known or potential rec./ed. site: (check) Y | the AA a known or potential rec./ed. site: (check) Y | gh disturbance at AA (2i) | .8H | | | | | | | | .1L |
| Cother Rating (use the matrix below to arrive at [check] the functional points and rating) With or Potential Recreation or Education Area Ilic ownership or public easement with general public access (no permission required) ate ownership with general public access (no permission required) ate or public ownership without general public access, or requiring permission for public access Inments: Description: | Cating (use the matrix below to arrive at [check] the functional points and rating) The or Potential Recreation or Education Area Cownership or public easement with general public access (no permission required) Let ownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission for public access Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) Location Area Cownership with general public access (no permission required) | (#12i) gh disturbance at AA 12i) | .8H | | | | | | | | 1L |
| Rating (use the matrix below to arrive at [check] the functional points and rating) with or Potential Recreation or Education Area lic ownership or public easement with general public access (no permission required) ate ownership with general public access (no permission required) ate or public ownership without general public access, or requiring permission for public access .1M .05L numents: | Rating (use the matrix below to arrive at [check] the functional points and rating) In or Potential Recreation or Education Area C ownership or public easement with general public access (no permission required) L2H L15H L1M te or public ownership without general public access, or requiring permission for public access L1M L05L Mn recreation site. | A (#12i) igh disturbance at AA t12i) mmments: Site was r 4L. Recreation/Education ls the AA a known or possible and proceed to | noderately disconnected to the overall su | sturbed b affords "bo d. site: (ch | efore a after nus" points if / leck) Y d rating page) | construction | recreation or | education of | ance at this opportunity) e evaluation; | time. | ick NA |
| win or Potential Recreation or Education Area | m or Potential Recreation or Education Area c ownership or public easement with general public access (no permission required) .15H .15H .1M .15H .05L ments: | A (#12i) gh disturbance at AA 12i) mments: Site was r L. Recreation/Education s the AA a known or p here and proceed t ii. Check categori | noderately disconnected to the overall su | sturbed b affords "bo d. site: (ch | efore a after nus" points if / leck) Y d rating page) | construction | recreation or | education of | ance at this opportunity) e evaluation; | time. | ick NA |
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FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Restoration

| Function & Value Variables | Rating | Actual Functional Points | Possible Functional Points | Functional Units: (Actual Points x Estimated AA Acreage) | Indicate the four most prominent functions with an asterisk (*) |
|--|--------|--------------------------------|----------------------------------|--|---|
| A. Listed/Proposed T&E Species Habitat | Н | .8 | 1 | 2.77 | |
| B. MT Natural Heritage Program Species Habitat | Н | .9 | 1 | 3.11 | |
| C. General Wildlife Habitat | Е | 1 | 1 | 3.46 | ✓ |
| D. General Fish Habitat | NA | 0 | 0 | 0.00 | |
| E. Flood Attenuation | М | .5 | 1 | 1.73 | |
| F. Short and Long Term Surface Water Storage | Н | .8 | 1 | 2.77 | |
| G. Sediment/Nutrient/Toxicant Removal | М | .6 | 1 | 2.08 | |
| H. Sediment/Shoreline Stabilization | Н | 1 | 1 | 3.46 | V |
| Production Export/Food Chain Support | Е | 1 | 1 | 3.46 | > |
| J. Groundwater Discharge/Recharge | Н | 1 | 1 | 3.46 | ✓ |
| K. Uniqueness | М | .4 | 1 | 1.38 | |
| L. Recreation/Education Potential (bonus points) | Н | .2 | NA | 0.69 | |
| Totals: | | 8.2 | 10 | 28.37 | |
| Percent of Possible Score | | | 82 % | | |

| Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II) Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; or Score of 1 functional point for Uniqueness; or Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; or Percent of possible score > 80% (round to nearest whole #). |
|--|
| Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV) Score of 1 functional point for MT Natural Heritage Program Species Habitat; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish Habitat; or "High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or Score of .9 functional point for Uniqueness; or Percent of possible score > 65% (round to nearest whole #). |
| Category III Wetland: (Criteria for Categories I, II, or IV not satisfied) |
| Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III) "Low" rating for Uniqueness; and Vegetated wetland component < 1 acre (do not include upland vegetated buffer); and Percent of possible score < 35% (round to nearest whole #). |

OVERALL ANALYSIS AREA RATING: (check appropriate category based on the criteria outlined

| ı | II | III | IV |
|---|----|-----|----|
| - | | | |

Table B-1. Schrieber Meadows Wetland Mitigation Site. Comprehensive Vegetation Species List 2015-2021

| Scientific Names | Common Names | WMVC Indicator Status ⁽¹⁾ |
|--------------------------|-----------------------------|---|
| Achillea millefolium | Common Yarrow | FACU |
| Achnatherum nelsonii | Nelson's Rice Grass | UPL |
| Agastache urticifolia | Nettle-Leaf Giant-Hyssop | FACU |
| Agropyron cristatum | Crested Wheatgrass | UPL |
| Agropyron sp. | Wheatgrass | N/A |
| Agrostis capillaris | Colonial Bent | FAC |
| Agrostis gigantea | Black Bent | FAC |
| Agrostis scabra | Rough Bent | FAC |
| Agrostis stolonifera | Spreading Bent | FACW |
| Algae, brown | Algae, brown | N/A |
| Algae, green | Algae, green | N/A |
| Alisma graminem | Narrow-Leaf Water-Plaintain | OBL |
| Alisma triviale | Northern Water-Plantain | OBL |
| Alnus incana | Speckled Alder | FACW |
| Alopecurus aequalis | Short-Awn Meadow-Foxtail | OBL |
| Alopecurus arundinaceus | Creeping Meadow-Foxtail | FAC |
| Alopecurus pratensis | Field Meadow-Foxtail | FAC |
| Arctium minus | Lesser Burrdock | UPL |
| Arnica chamissonis | Leafy Leopardbane | FACW |
| Aster sp. | Aster | N/A |
| Beckmannia syzigachne | American Slough Grass | OBL |
| Bromus carinatus | California Brome | UPL |
| Bromus inermis | Smooth Brome | FAC |
| Calamagrostis canadensis | Bluejoint | FACW |
| Carex aquatilis | Leafy Tussock Sedge | OBL |
| Carex athrostachya | Slender-Beak Sedge | FACW |
| Carex bebbii | Bebb's Sedge | OBL |
| Carex lasiocarpa | Woolly-Fruit Sedge | OBL |
| Carex microptera | Small-Wing Sedge | FACU |
| Carex nebrascensis | Nebraska Sedge | OBL |
| Carex pachystachya | Thick-Head Sedge | FAC |
| Carex pellita | Woolly Sedge | OBL |
| Carex scoparia | Pointed Broom Sedge | FACW |
| Carex sp. | Sedge | N/A |
| Carex stipata | Stalk-Grain Sedge | OBL |
| Carex utriculata | Northwest Territory Sedge | OBL |
| Centaurea stoebe | Spotted Knapweed | UPL |
| Cerastium arvense | Field Mouse-Ear Chickweed | FACU |

Table B-1. Schrieber Meadows Wetland Mitigation Site. Comprehensive Vegetation Species List 2015-2021

| Scientific Names | Common Names | WMVC Indicator Status ⁽¹⁾ |
|-------------------------|------------------------------|---|
| Cerastium fontanum | Common Mouse-Ear Chickweed | FACU |
| Ceratophyllum demersum | Coon's-Tail | OBL |
| Chara sp. | Muskgrass | N/A |
| Cirsium arvense | Canadian Thistle | FAC |
| Cirsium vulgare | Bull Thistle | FACU |
| Collomia linearis | Narrow-Leaf Mountain-Trumpet | FACU |
| Cynoglossum officinale | Gypsy-Flower | FACU |
| Deschampsia cespitosa | Tufted Hairgrass | FACW |
| Eleocharis flavescens | Yellow Spike-Rush | OBL |
| Eleocharis palustris | Common Spike-Rush | OBL |
| Eleocharis quinqueflora | Few-Flower Spike-Rush | OBL |
| Elymus repens | Creeping Wild Rye | FAC |
| Elymus trachycaulus | Slender Wild Rye | FAC |
| Epilobium ciliatum | Fringed Willowherb | FACW |
| Epilobium sp. | Willowherb | N/A |
| Equisetum arvense | Field Horsetail | FAC |
| Equisetum hyemale | Tall Scouring-Rush | FACW |
| Erysimum cheiranthoides | Worm-Seed Wallflower | FACU |
| Festuca sp. | Fescue | N/A |
| Fragaria virginiana | Virginia Strawberry | FACU |
| Galium mexicanum | Mexican Bedstraw | FAC |
| Galium trifidum | Three-Petal Bedstraw | FACW |
| Geum macrophyllum | Large-Leaf Avens | FAC |
| Glyceria elata | Tall Manna Grass | FACW |
| Glyceria grandis | American Manna Grass | OBL |
| Glyceria sp. | Manna Grass | N/A |
| Glyceria striata | Fowl Manna Grass | OBL |
| Gnaphalium palustre | Western Marsh Cudweed | FACW |
| Hieracium aurantiacum | Orange Hawkweed | UPL |
| Hippuris vulgaris | Common Mare's-Tail | OBL |
| Juncus articulatus | Joint-Leaf Rush | OBL |
| Juncus bufonius | Toad Rush | FACW |
| Juncus confusus | Colorado Rush | FAC |
| Juncus ensifolius | Dagger-Leaf Rush | FACW |
| Juncus nodosus | Knotted Rush | OBL |
| Juncus tenuis | Lesser Poverty Rush | FAC |
| Lemna minor | Common Duckweed | OBL |
| <i>Lepidium</i> sp. | Pepperwort | N/A |

Table B-1. Schrieber Meadows Wetland Mitigation Site. Comprehensive Vegetation Species List 2015-2021

| Scientific Names | Common Names | WMVC Indicator Status ⁽¹⁾ |
|--------------------------|----------------------------|---|
| Leucanthemum vulgare | Ox-Eye Daisy | FACU |
| Marsilea vestita | Hairy Water-Clover | OBL |
| Matricaria discoidea | Pineapple-Weed | FACU |
| Medicago lupulina | Black Medick | FACU |
| Mentha arvensis | American Wild Mint | FACW |
| Mimulus guttatus | Seep Monkey-Flower | OBL |
| Myriophyllum sibiricum | Siberian Water-Milfoil | OBL |
| Pascopyrum smithii | Western-Wheat Grass | FACU |
| Pedicularis groenlandica | Bull Elephant-Head | OBL |
| Penstemon confertus | Yellow Beardtongue | UPL |
| Peritoma serrulata | Rocky Mountain Bee Plant | FACU |
| Persicaria amphibia | Water Smartweed | OBL |
| Persicaria lapathifolia | Dock-Leaf Smartweed | FACW |
| Persicaria maculosa | Spotted Lady's-Thumb | FACW |
| Phalaris arundinacea | Reed Canary Grass | FACW |
| Phleum pratense | Common Timothy | FACU |
| Pinus contorta | Lodgepole Pine | FAC |
| Pinus ponderosa | Ponderosa Pine | FACU |
| Plantago major | Great Plantain | FAC |
| Poa palustris | Fowl Blue Grass | FAC |
| Poa pratensis | Kentucky Blue Grass | FAC |
| Poa sp. | Blue Grass | N/A |
| Polygonum douglasii | Douglas' Knotweed | FACU |
| Polypogon monspeliensis | Annual Rabbit's-Foot Grass | FACW |
| Populus balsamifera | Balsam Poplar | FAC |
| Potamogeton foliosus | Leafy Pondweed | OBL |
| Potamogeton natans | Broad-Leaf Pondweed | OBL |
| Potentilla gracilis | Graceful Cinquefoil | FAC |
| Potentilla norvegica | Norwegian Cinquefoil | FAC |
| Prunella vulgaris | Common Selfheal | FACU |
| Pseudotsuga menziesii | Douglas-Fir | FACU |
| Ranunculus aquatilis | Whitewater Crowfoot | OBL |
| Ranunculus sceleratus | Cursed Buttercup | OBL |
| Rosa woodsii | Woods' Rose | FACU |
| Rumex acetosella | Common Sheep Sorrel | FACU |
| Rumex crispus | Curly Dock | FAC |
| Salix bebbiana | Gray Willow | FACW |
| Salix candida | Sage Willow | OBL |

Table B-1. Schrieber Meadows Wetland Mitigation Site. Comprehensive Vegetation Species List 2015-2021

| Scientific Names | Common Names | WMVC Indicator Status ⁽¹⁾ | |
|-----------------------------|-------------------------|---|--|
| Salix drummondiana | Drummond's Willow | FACW | |
| Scirpus cyperinus | Cottongrass Bulrush | OBL | |
| Scirpus microcarpus | Red-Tinge Bulrush | OBL | |
| Senecio hydrophiloides | Stout Meadow Ragwort | FACW | |
| Sisymbrium altissimum | Tall Hedge-Mustard | FACU | |
| Solidago canadensis | Canadian Goldenrod | FACU | |
| Sparganium emersum | European Burr-Reed | OBL | |
| Sparganium natans | Arctic Burr-Reed | OBL | |
| Spiranthes romanzoffiana | Hooded Ladies'-Tresses | FACW | |
| Stuckenia pectinata | Sago False Pondweed | OBL | |
| Suaeda calceoliformis | Paiuteweed | FACW | |
| Symphoricarpos albus | Common Snowberry | FACU | |
| Symphyotrichum spathulatum | Mountain American-Aster | FAC | |
| Taraxacum officinale | Common Dandelion | FACU | |
| Thlaspi arvense | Field Pennycress | UPL | |
| Trifolium arvense | Rabbit-foot Clover | UPL | |
| Trifolium hybridum | Alsike Clover | FAC | |
| Trifolium pratense | Red Clover | FACU | |
| Trifolium repens | White Clover | FAC | |
| Triglochin maritima | Seaside Arrow-Grass | OBL | |
| Typha latifolia | Broad-Leaf Cat-Tail | OBL | |
| Verbascum thapsus | Great Mullein | FACU | |
| Veronica americana | American-Brooklime | OBL | |
| Veronica anagallis-aquatica | Blue Water Speedwell | OBL | |
| Veronica peregrina | Neckweed | OBL | |
| Veronica serpyllifolia | Thyme-Leaf Speedwell | FAC | |

¹ 2018 NWPL (USACE 2018)

New species identified in 2021 are **bolded**.

APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Schrieber Meadows Lincoln County, Montana



Photo Point 1 – Panorama; Location: SW Corner of site; Bearing 270 degrees; Year 2012



Photo Point 1 – Panorama; Location: SW Corner of site; Bearing 270 degrees; Year 2021



Photo Point 3; Location: Cell 2 (Constructed in 2007); Bearing 90 degrees; Year 2010



Photo Point 3; Location: Cell 2 (Constructed in 2007); Bearing 90 degrees; Year 2021



Photo Point 4; Location: Cell 2 (Constructed in 2007); Bearing 180 degrees; Year 2010



Photo Point 4; Location: Cell 2 (Constructed in 2007); Bearing 180 degrees; Year 2021



Photo Point 5; Location: Cell 2 (Constructed in 2007); Bearing 300 degrees; Year 2010



Photo Point 5; Location: Cell 2 (Constructed in 2007); Bearing 300 degrees; Year 2021



Photo Point 6; Location: Cell 2 (Constructed in 2007); Bearing 40 degrees; Year 2010



Photo Point 6; Location: Cell 2 (Constructed in 2007); Bearing 40 degrees; Year 2021



Photo Point 7; Location: Lower Coyote Creek; Bearing 0 degrees; Year 2012



Photo Point 7; Location: Lower Coyote Creek; Bearing 0 degrees; Year 2021



Photo Point 10; Location: Cell 3; Bearing 0 degrees; Year 2010



Photo Point 10; Location: Cell 3; Bearing 0 degrees; Year 2021



Photo Point 11; Location: Cell 2B; Bearing 190 degrees; Year 2012



Photo Point 11; Location: Cell 2B; Bearing 190 degrees; Year 2021



Photo Point 12; Location: Cell 1 (Constructed in 2011); Bearing 180 degrees; Year 2012



Photo Point 12; Location: Cell 1 (Constructed in 2011); Bearing 180 degrees; Year 2021



Photo Point 13; Cell 3A (Constructed in 2011); Bearing 280 degrees; Year 2012



Photo Point 13; Cell 3A (Constructed in 2011); Bearing 280 degrees; Year 2021



Photo Point 14; Location: Cell 4C (Constructed in 2011); Bearing 230 degrees; Year 2012



Photo Point 14; Location: Cell 4C (Constructed in 2011); Bearing 230 degrees; Year 2021



Photo Point 15; Location: Cell 5A (Constructed in2011); Bearing 180 degrees; Year 2012



Photo Point 15; Location: Cell 5A (Constructed in2011); Bearing 180 degrees; Year 2021



Photo Point 16; Cell 6 (Constructed in 2011); Bearing 70 degrees; Year 2012



Photo Point 16; Cell 6 (Constructed in 2011); Bearing 70 degrees; Year 2021



Photo Point 17; Location: Cell 6 (Constructed in 2011); Bearing 270 degrees; Year 2012



Photo Point 17; Location: Cell 6 (Constructed in 2011); Bearing 270 degrees; Year 2021



Photo Point 2 Location: Cell 7 (Created in 2007)

Bearing: 150 degrees Year: 2010



Photo Point 2 Location: Cell 7 (Created in 2007)
Bearing: 150 degrees Year: 2021



Photo Point 8 Location: Cell 3 (Constructed in 2007)

Bearing: 190 degrees Year: 2010



Photo Point 8 Location: Cell 3 (Constructed in 2007)

Bearing: 190 degrees Year: 2021



Photo Point 9 Location: Cell 3 Bearing: 280 degrees Year: 2010



Photo Point 9 Location: Cell 3 Bearing: 280 degrees Year: 2021



Photo Point 16 Bearing: 290 degrees



Location: Cell 5A Year: 2010



Photo Point 16 Location: Cell 5A Bearing: 290 degrees Year: 2021



Photo Point 18 Bearing: 90 degrees



Location: Cell 3 (Constructed 2007) Year: 2012



Photo Point 18 Location: Cell 3 (Constructed 2007) Bearing: 90 degrees Year: 2021



Photo Point 19 Bearing: 10 degrees

Location: West Boundary Year: 2012



Photo Point 19 Bearing: 10 degrees

Location: West Boundary Year: 2021



Photo Point 19 Bearing: 100 degrees **Location:** West Boundary

Year: 2012



Photo Point 19

Bearing: 100 degrees Year: 2021

Location: West Boundary

Schrieber Meadows: Vegetation Transect Photographs



Transect 1: Start Bearing: 115 degrees



Location: T-1 Year: 2010



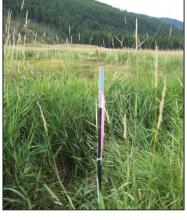
Transect 1: Start Bearing: 115 degrees



Year: 2021



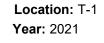
Transect 1: End Bearing: 295 degrees

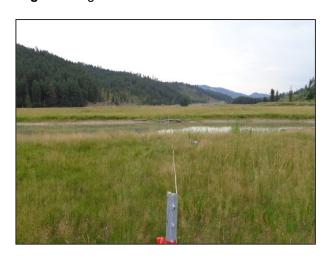


Location: T-1 Year: 2010



Transect 1: End Bearing: 295 degrees





Transect 2: Start Bearing: 100 degrees





Transect 2: Start Bearing: 100 degrees

Location: T-2 Year: 2021

Schrieber Meadows: Vegetation Transect Photographs



Transect 2: End Bearing 280: degrees





Transect 2: End
Bearing 280: degrees





Transect 3: Start Bearing: 45 degrees

Location: T-3 Year: 2012



Transect 3: Start
Bearing: 45 degrees



Transect 3: End Bearing: 225 degrees

Location: T-3 Year: 2012



Transect 3: End Bearing: 225 degrees

Location: T-3 Year: 2021

Location: T-3

Year: 2021



Data Point: DP01w Year: 2021

Location: Veg Com 3

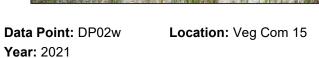


Data Point: DP01u

Location: Veg Com 9

Year: 2021







Data Point: DP02u

Location: Veg Com 14

Year: 2021



Cross-Section: XS-1 Bearing: 280 degrees



Location: Upper Coyote Creek Year: 2012



Cross-Section: XS-1 Bearing: 280 degrees



Location: Upper Coyote Creek

Year: 2021



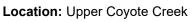
Cross-Section: XS-2 Bearing: 320 degrees



Location: Upper Coyote Creek Year: 2012



Cross-Section: XS-2



Year: 2021 Bearing: 320 degrees



Cross-Section: XS-3 Location: Coyote Creek Spring Area Bearing: 320 degrees Year: 2012



Cross-Section: XS-3 Location: Coyote Creek Spring Area Bearing: 320 degrees Year: 2021



Cross-Section: XS-4 Bearing: 290 degrees



Location: Middle Coyote Creek Year: 2012



Cross-Section: XS-4 Bearing: 290 degrees



Location: Middle Coyote Creek Year: 2021



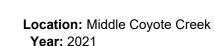
Cross-Section: XS-5 Bearing: 150 degrees



Location: Middle Coyote Creek Year: 2012



Cross-Section: XS-5 Bearing: 150 degrees





Cross-Section: XS-6 Bearing: 90 degrees

Location: Perennial Spring Creek Year: 2012



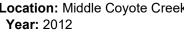
Cross-Section: XS-6 Bearing: 90 degrees

Location: Perennial Spring Creek Year: 2021



Cross-Section: XS-7 Bearing: 90 degrees

Location: Middle Coyote Creek





Cross-Section: XS-7 Bearing: 220 degrees

Location: Middle Coyote Creek Year: 2021



Cross-Section: XS-8 Bearing: 170 degrees

Location: Middle Coyote Creek Year: 2012



Cross-Section: XS-8 Bearing: 170 degrees

Location: Middle Coyote Creek Year: 2021



Cross-Section: XS-9 Location: Middle Coyote Crk/Schrieber Crk Bearing: 130 degrees Year: 2012



Cross-Section: XS-9 Location: Middle Coyote Crk/Schrieber Crks Bearing: 130 degrees Year: 2021



Cross-Section: XS-10 Location: Middle Coyote
Crk/Schrieber Crks **Bearing:** 140 degrees **Year:** 2012



Cross-Section: XS-10 Location: Middle Coyote
Crk/Schrieber Crks **Bearing:** 270 degrees **Year:** 2021



Cross-Section: XS-11 Location: Middle Coyote
Crk/Schrieber Crks **Bearing:** 100 degrees **Year:** 2012



Cross-Section: XS-11 Location: Middle Coyote
Crk/Schrieber Crks Bearing: 100 degrees Year: 2021

APPENDIX D Surveyed Stream Cross Sections

MDT Wetland Mitigation Monitoring Schrieber Meadows Lincoln County, Montana

