Montana Department of Transportation Wetland Mitigation Monitoring Report

FORSYTH - NORTHWEST MITIGATION SITES: FORSYTH WEST, MIDDLE, AND EAST

Project Overview

Watershed: Watershed #14 - Middle Yellowstone

Monitoring Year: 2020

Years Monitored: 8th year of monitoring

Corps Permit Number: NWO-2002-90-599 and NWO-2006-906-76 MTB

Monitoring Conducted By: Confluence Consulting Inc. for MDT

Dates Monitoring Was Conducted: July 7-9, 2020

Purpose of the Approved Project:

The Forsyth – Northwest (FNW) sites were developed to mitigate for a cumulative total of 8.98 acres of wetland impacts associated with two Montana Department of Transportation (MDT) highway construction projects: (1) the Volborg – North and South project, constructed in 2004, and (2) the Forsythe North West project, constructed in 2012. Applying standard wetland compensatory mitigation ratios (US Army Corps of Engineers 2005), the total area of required mitigation presented in the approved wetland mitigation plan was 11 acres. Four individual mitigation sites in close proximity to each other were constructed as part of this project and include the Treasure County Line, Forsyth West, Forsyth Middle, and Forsyth East. Monitoring at the Treasure County Line site was completed in 2017, and monitoring at the three remaining sites continued in 2020. The results of the 2020 monitoring efforts are presented in this report.

Site Locations:

West site - Latitude: 46.33927, Longitude: -106.876743 Middle site - Latitude: 46.323159, Longitude: -106.843010 East site - Latitude: 46.31969, Longitude: -106.83657

County: Rosebud Nearest Town: Forsyth, MT

Map Included: Yes

Mitigation Site Construction Started: Spring 2012 Construction Ended: Fall 2012

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

Activity: None **Date:** NA **Specific recommendations for corrective actions:** It is recommended that MDT investigate if changes are needed to address the increase in open water at the West site. MDT to may also want to investigate lowering the elevation of the center of the East wetland to generate more wetland habitat.

Anticipated Wetland Credit Acres: 13.57

Wetland Credit Acres Generated to Date: 2.75

Wetland Acreage within the Project Area: 2.79

Open Water within the Project Area: 8.95 acres

Previous Monitoring Reports:

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

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

Monitoring Period: 5 years from construction completion or until concurrence by the US Army Corps of Engineers (USACE). The monitoring period was extended because of adaptive management actions in 2017 to repair a failed dike structure at the FNW-West mitigation site.

Summary of Performance Standards: Formal performance standards were not developed as part of the mitigation plan for these sites. All three sites have developed wetland habitat as intended and contain wetland vegetation, hydric soils, and indicators of wetland hydrology. All of the sites are stable, have less than 5 percent total noxious weed cover. The East and Middle sites are functioning as designed, but the West site has recently lost wetland acreage due to a change in how the USACE is awarding credit for the palustrine aquatic bed wetland type.

Summary Data: Combined West, Middle, and East Sites

Wetland Delineation — The total wetland acreage delineated in 2020 at the three sites was 2.79 acres of palustrine emergent wetland (Table 1; Appendix A). Additionally, 8.9 acres of open water were mapped at the Forsyth NW - West site in 2020. No open water was identified at the Middle or East sites (Table 1). In 2020 the USACE 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". The adaptive management strategies implemented in 2017 at the FNW-West site resulted in broader inundation across the site, and in response to the inundation, some areas that were previously delineated as wetland were delineated as open water in 2020. As options for inclusion of open water into the crediting scheme are pending, the wetland acreage credited to this site decreased from what was reported in 2019.

Table 1. Wetland Habitat Acreages Delineated at the FNW Sites (2013–2020)

C:h-	2013 (acres)	2014 (acres)	2015 (acres)	2016 (acres)	2017 (acres)	2018 (acres)	2019 (acres)	20 (acı	_
Site								Wetland	Open Water
FNW-West	5.44	5.85	6.01	6.01	5.89	10.55	10.55	1.61	8.9
FNW-Middle	0.49	0.49	0.49	0.49	0.58	0.58	0.58	0.58	-
FNW-East	1.19	1.19	0.46	0.43	0.43	0.56	0.56	0.60	-
Total	7.12	7.53	6.96	6.93	6.90	11.69	11.69	2.79	

Functional Assessment – The 2020 results of the functional assessments at all three sites are summarized in the Table 2. Completed Montana Wetland Assessment Method (MWAM) forms for the FNW sites are provided in Appendix B. Overall, all three sites are considered Category III wetlands and generated a total of 69.78 Functional Units in 2020. Functional Assessment ratings have remained relatively consistent at the three sites since monitoring began in 2013.

Photographs – Photographs were taken at all three FNW sites in 2020 and are provided in Appendix C. The photographs were taken at permanent photo points, transect endpoints, and data points are presented alongside photos from the first year of monitoring. Please refer to previous years' monitoring reports for photographs from all other years.

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

Wildlife — Wildlife species that were observed directly or indirectly at the three monitoring sites during the 2020 field surveys are listed in the Wetland Mitigation Site Monitoring forms for each site (Appendix B). Wildlife observations at the FNW-Middle and FNW-East sites were minimal in 2020 as the sites are relatively small and not very diverse, and because the surveys were completed in the middle of the day. Ten bird species were recorded at the FNW-West site during the field investigation along with

deer tracks, fox tracks, coyote tracks, one muskrat, one toad, and three northern leopard frogs (*Lithobates pipiens*).

Table 2. 2020 Montana Wetland Assessment Method (MWAM) Functional Value Summary for the Forsyth Northwest Sites. Values shown are the actual functional points scored by each site.

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	FNW- West	FNW- Middle	FNW- East
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	Low (0.0)	Low (0.0)	Low (0.0)
Montana Natural Heritage Program (MTNHP) Species Habitat	High (0.9)	High (0.9)	High (0.9)
General Wildlife Habitat	Mod (0.5)	Mod (0.4)	Mod (0.4)
General Fish/Aquatic Habitat	Low (0.3)	N/A	N/A
Flood Attenuation	Mod (0.5)	N/A	N/A
Short- and Long-Term, Surface-Water Storage	High (0.9)	Low (0.3)	Low (0.3)
Sediment/Nutrient/Toxicant Removal	Mod (0.7)	Mod (0.7)	Mod (0.7)
Sediment/Shoreline Stabilization	Mod (0.6)	NA	N/A
Production Export/Food Chain Support	Mod (0.7)	Low (0.3)	Mod (0.7)
Groundwater Discharge/Recharge	Mod (0.7)	N/A	Mod (0.7)
Uniqueness	Low (0.3)	Low (0.2)	Low (0.2)
Recreation/Education Potential (bonus points)	High (0.15)	Low (0.05)	Low (0.05)
Actual Points/Possible Points	6.25/11	2.85/7	3.65/8
% of Possible Score Achieved	56.8%	40.7%	45.6%
Overall Category	III	III	III
Total Acreage of Assessed Wetlands Within Site Boundaries	10.55	0.58	0.6
Functional Units (acreage × actual points)	65.94	2.2	2.19

Summary Data: Specific to the FNW-West Site

FNW-West Site Vegetation – A total of 82 plant species have been identified on the site from 2013 through 2020. Three new species were identified at the site in 2020 (see the plant list in Appendix B). Vegetation communities were identified by plant composition and dominance. This site underwent extensive changes to the vegetation communities following repair of the dike and subsequent flooding of the site in 2018 and 2019. The site is now extensively inundated, and a large portion of the site was mapped as open water in 2020. Much of the vegetation has died off in the inundated areas of the site, including woody species such as cottonwood and willow. Inundated areas are represented by Community Type 17 – Open Water/Aquatic Macrophytes. Wetland community types are now only found in the fringes around the open water or in areas that are shallow enough to support emergent vegetation. These changes have led to shifts in plant community composition within some of the previously mapped community types, the elimination of some communities types previously observed, and the addition of Community Type 18 – Hordeum jubatum/Typha sp. Additional shifts were observed in Community Type 6 including a near absence of broadleaf plants in a large swath that runs parallel to the road. In these areas, nearly 100% of the plant cover was provided by grasses, indicating that these shifts in the community are are likely the result of broadleaf herbicide applications. The following vegetation community types were identified in 2020:

- Upland Type 1 Bromus tectorum/Sarcobatus vermiculatus
- Upland Type 5 Symphoricarpos albus/Pascopyrum smithii
- Upland Type 6 Pascopyrum smithii/Bromus tectorum

- Wetland Type 8 Typha latifolia/Eleocharis palustris
- Wetland Type 16 Alopecurus arundinaceus/Hordeum jubatum
- Wetland Type 17 Open Water/Aquatic Macrophytes.
- Wetland Type 18 Hordeum jubatum/Typha sp.

The community composition for each Community Type is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and the community boundaries are shown on Figure A-3 (Appendix A). Observed shifts in the community composition of Community Type 6 are likely the result of herbicide application, while shifts in the wetland community types are likely the result of increase inundation across the site.

Vegetation cover was measured along two transects in 2020 (Figure A-2, Appendix A). Details of each transect are provided in the Wetland Mitigation Site Monitoring form in Appendix B. Photographs of the transect end points are provided in Appendix C. Table 3 summarizes the data for T-1. T-1 is 282 feet long and intersected upland Community Type 1, wetland Community Type 18 Community Type 17 and open water. Ninety-two percent of the transect crossed open water habitat in 2020 as a result of inundation that has occurred since the 2017 adaptive management actions. Increased inundation has also led to a decrease in total vegetative cover along the transect, which was 3 percent in 2020.

Table 3. Data Summary for T-1 From 2016 Through 2020 at the FNW-West Site

Monitoring Year	2016	2017	2018	2019	2020
Transect Length (feet)	282	282	282	282	282
Vegetation Community Transitions Along Transect	7	5	1	1	2
Vegetation Communities Along Transect	5	5	1	1	2
Hydrophytic Vegetation Communities Along Transect	4	2	0	1	1
Total Vegetative Species	26	18	5	4	9
Total Hydrophytic Species	5	4	0	1	3
Total Upland Species	21	14	5	4	6
Estimated % Total Vegetative Cover	90	46	5	10	3
Estimated % Unvegetated	10	54	95	65	97
% Transect Length Comprising Hydrophytic Vegetation Communities	37	34	0	30	3
% Transect Length Comprising Upland Vegetation Communities	63	66	5	5	5
% Transect Length Comprising Unvegetated Open Water	0	0	95	65	92
% Transect Length Comprising of Mudflat	0	0	0	0	0

Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 4. T-2 is 261 feet long and intersects upland Community Types 5 and 6, wetland Community Type 18, and Community Type 17, open water. Ninety-one percent of the transect crossed open water habitat in 2020. Total vegetative cover continued to decrease from 2019 to 2020 as a result of increased water levels across the site following the dike repair in 2017, and total vegetative cover across the transect is now 3 percent.

Two trace infestations of Priority 2B noxious weeds, Canada thistle (*Cirsium arvense*) and leafy spurge (*Euphorbia esula*), were mapped in southeast corner of the site in 2020.

FNW-West Site Hydrology – The main source of hydrology at the FNW-West site is runoff from precipitation events in the Big Porcupine Creek Watershed. Surface runoff from East Spring Coulee flows directly into the site. Additional hydrology is provided by a seasonally high groundwater table and flood flows from nearby Porcupine Creek. The mitigation site received heavy runoff from Porcupine Creek and

East Spring Coulee in 2018 and 2019 which filled the depressional area in the middle of the site to capacity. It is likely that some of this water was retained on site over the 2019-2020 winter as the snowpack, and therefore spring runoff, was less significant in 2020 than in the previous two years. In 2020, drift debris and recently deposited sediment were observed on the dike at the downstream end of the site; evidence of water having recently passed over the dike. The dike and overflow structure that were repaired in 2016 appeared to be in good condition and functioning as designed.

Table 4. Data Summary for T-2 From 2016 Through 2020 at the FNW-West Site

Monitoring Year	2016	2017	2018	2019	2020
Transect Length (feet)	261	261	261	261	261
Vegetation Community Transitions Along Transect	2	3	2	2	3
Vegetation Communities Along Transect	3	4	3	3	3
Hydrophytic Vegetation Communities Along Transect	1	2	1	1	1
Total Vegetative Species	28	19	13	15	19
Total Hydrophytic Species	8	9	4	5	6
Total Upland Species	20	10	9	10	13
Estimated % Total Vegetative Cover	82	92	20	20	3
Estimated % Unvegetated	13	8	80	80	97
% Transect Length Comprising Hydrophytic Vegetation Communities	87	87	90	90	2
% Transect Length Comprising Upland Vegetation Communities	13	13	10	10	7
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	91
% Transect Length Comprising of Mudflat	0	0	0	0	0

FNW-West Site Soils – Soil test pits were excavated at two locations (DP01w and DP01u; Figure A-2, Appendix A). Both test pits were located in areas originally mapped as the Marvan silty clay soil series by the NRCS (NRCS 2020). The soil profile at DP01w revealed a gray (10YR 5/1) silty clay from 0 to 12 inches with 20 percent black (7.5Y 2.5/1) depleted matrix, and 10 percent prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations in the matrix. This soil qualifies for the Depleted Matrix hydric soil Indicator (F3). DP01u is located in upland Community Type 5 – Symphoricarpos albus/Pascopyrum smithii between Highway 12 and the wetland area. The DP01u soil profile revealed 7 inches of a reddish brown (2.5YR 4/3) sandy clay loam that contained 2% relict redoximorphic features on top of a greyish brown (2.5Y 5/2) clay horizon that contained 5 percent redoximorphic features. Despite the redoximorphic features observed, the soil did not meet the criteria for any hydric soil indicators.

Summary Data: Specific to FNW-Middle Site

FNW-Middle Site Vegetation — A total of 62 plant species were identified on the site from 2013 through 2020. Five new species were identified at the site in 2020 (see the plant list in Appendix B). Vegetation communities were identified by plant composition and dominance. The following vegetation community types were identified in 2020:

- Upland Type 3 Pascopyrum smithii/Elymus canadensis
- Wetland Type 5 Hordeum jubatum/Eleocharis palustris

The community composition for each community type is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and the community boundaries are shown on Figure A-3 (Appendix A). Observed shifts in the composition of Community Type 3 are likely the result of herbicide application along Highway 12, given that broadleaf plants were nearly absent and almost all of the plant

cover was provided by grasses in a large swath that runs parallel to the road. indicating that these community shifts in the are likely the result of broadleaf herbicide applications.

Vegetation cover was measured along one transect in 2020 (Figure A-2, Appendix A). Details of the vegetation transect are provided in the Wetland Mitigation Site Monitoring form in Appendix B. Photographs of the transect end points are provided in Appendix C. Table 5 summarizes the data for T-1. T-1 is 50 feet long and intersected upland Community Type 3 and wetland Community Type 5; 24 percent of the transect crossed wetland habitat in 2020. This reduction in hydrophytic vegetation is a result of the site being more mesic than in years past and the vegetation along the slopes of the swale was not dominated by hydrophytic species. Total vegetative cover has remained constant at 85 percent from 2016 to 2020.

Infestations of two Priority 2B noxious weeds were identified at the site in 2020: Canada thistle (*Cirsium arvense*) and field bindweed (*Convolvulus arvensis*; Figure A-6, Appendix A).

Table 5. Data Summary for T-1 From 2016 Through 2020 at the FNW-Middle Site

Monitoring Year	2016	2017	2018	2019	2020
Transect Length (feet)	50	50	50	50	50
Vegetation Community Transitions Along Transect	2	2	2	2	2
Vegetation Communities Along Transect	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1
Total Vegetative Species	11	17	17	16	24
Total Hydrophytic Species	3	4	5	4	11
Total Upland Species	8	13	12	12	13
Estimated % Total Vegetative Cover	85	83	85	85	85
Estimated % Unvegetated	15	17	15	15	15
% Transect Length Comprising Hydrophytic Vegetation Communities	30	38	38	38	24
% Transect Length Comprising Upland Vegetation Communities	70	62	62	62	76
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprising of Mudflat	0	0	0	0	0

FNW-Middle Site Hydrology – This site is situated near abandoned meander bends associated with Big Porcupine Creek. The site may experience occasional flooding during high flows in Big Porcupine Creek but is not intended to exhibit perennial hydrology because of its proximity to Montana Highway 12. The excavated depression was likely inundated earlier in the year, but was not inundated or saturated at the time of the 2020 field survey. Positive hydrologic indicators that were observed at this site included surface soil cracks, water stained leaves, positive FAC-neutral test results, and geomorphic position.

FNW-Middle Site Soils – Soil test pits were examined at two locations (DP01w and DP01u; Figure A-5, Appendix A), and both locations were within what was originally mapped as the Harlem silty clay soil series by the NRCS. DP01w is located in an excavated depression near the center of the site. The soil profile revealed a dark greyish-brown (2.5Y 4/2) silty clay that had 15% distinct redoximorphic depletions and concentrations. This soil meets the qualifications for the Depleted Matrix Hydric Soil Indicator (F3). DP01u is located in upland Community Type 3 – Pascopyrum smithii/Elymus canadensis, approximately 10 feet northeast of DP01w. The soil profile revealed one inch of dark grey (2.5Y 4/1) silty clay loam, on top of 12 inches of a dark greyish brown silty clay with 1% red redoximorphic concentrations. This soil did not meet the criteria for any hydric soil indicators.

Summary Data: Specific to FNW-East Site

FNW-East Site Vegetation – A total of 59 plant species were identified on the site from 2013 through 2020. One new species was identified at the site in 2020 (see the plant list in Appendix B). Vegetation communities were identified by plant composition and dominance. The following vegetation community types were identified in 2020:

- Upland Type 3 Pascopyrum smithii/Elymus spp.
- Wetland Type 4 Hordeum jubatum/Eleocharis palustris.

The community composition for each Community Type is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and the community boundaries are shown on Figure A-3 (Appendix A). Observed shifts in the community composition of Community Type 3 are likely the result of herbicide application along Highway 12.

Vegetation cover was measured along two transects in 2020 (Figure A-2, Appendix A). Table 6 summarizes the data for T-1. T-1 is 125 feet long and intersected upland Community Type 3, and wetland Community Type 4; 52 percent of the transect crossed wetland habitat, which is consistent with previous years. Total vegetative cover has remained constant at 95 percent from 2017 to 2020. Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 7. T-2 is 181 feet long and intersects upland Community Type 3 and wetland Community Type 4; 55 percent of the transect crossed wetland habitat in 2020. Total vegetative cover has remained constant at 98 percent from 2017 to 2020. Details of each transect are provided in the Wetland Mitigation Site Monitoring form in Appendix B. Photographs of the transect end points are provided in Appendix C.

Infestations of two Priority 2B noxious weeds, saltcedar (*Tamarix chinensis*) and field bindweed (*Convolvulus arvensis*) were mapped in several locations and are shown in Figure A-9 (Appendix A). No woody plants were installed at the FNW-East site. Mature cottonwoods and willows adjacent to the site appear to be acting as a source population as cottonwood and willow seedlings have begun to colonize the site.

Table 6. Data Summary for T-1 From 2016 Through 2020 at the FNW-East Site

Monitoring Year	2016	2017	2018	2019	2020
Transect Length (feet)	125	125	125	125	125
Vegetation Community Transitions Along Transect	2	2	2	2	2
Vegetation Communities Along Transect	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1
Total Vegetative Species	22	17	17	16	16
Total Hydrophytic Species	9	7	7	7	4
Total Upland Species	11	10	10	9	12
Estimated % Total Vegetative Cover	90	95	95	95	95
Estimated % Unvegetated	10	5	5	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	50	50	52	52	52
% Transect Length Comprising Upland Vegetation Communities	50	50	48	48	48
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprising of Mudflat	0	0	0	0	0

Table 7. Data Summary for T-2 From 2016 Through 2020 at the FNW-East Site

Monitoring Year	2016	2017	2018	2019	2020
Transect Length (feet)	181	181	181	181	181
Vegetation Community Transitions Along Transect	2	2	2	2	2
Vegetation Communities Along Transect	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1
Total Vegetative Species	26	11	14	15	10
Total Hydrophytic Species	6	4	6	6	2
Total Upland Species	20	7	8	9	8
Estimated % Total Vegetative Cover	94	98	98	98	98
Estimated % Unvegetated	6	2	2	2	2
% Transect Length Comprising Hydrophytic Vegetation Communities	44	55	55	55	55
% Transect Length Comprising Upland Vegetation Communities	56	45	45	45	45
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprising of Mudflat	0	0	0	0	0

FNW-East Site Hydrology – The FNW-East site is very similar to the FNW-Middle site. The main sources of hydrology at the FNW-East site are shallow groundwater, direct precipitation, and surface runoff from adjacent uplands. Old meander scars of Big Porcupine Creek with relict and contemporary wetland characteristics are located directly adjacent to the site. Positive hydrologic indicators that were observed at this site included surface soil cracks, geomorphic position, dried algal mats, oxidized rhizospheres along living roots, and vegetation communities that pass the FAC-neutral test.

FNW-East Site Soils – Soil test pits were examined at four locations, and all locations were within what was originally mapped as the Harlem silty clay soil series by the NRCS (DP01w, DP01u, DP02w, and DP02u). DP01w is located in the northern edge of a wetland depression on the northwest portion of the site. The soil profile revealed three inches of very dark grayish-brown (2.5Y 3/2) silty clay, over seven inches of very dark grey sandy clay with 40% very grey (2.5 Y 3/1) redoximorphic depletions, and two inches of very hard silty clay, that was 50/50 with dark grey (2.5 Y 4/1) and dark greyish brown (2.5Y 4/2). The soil met the criteria for depleted matrix (F3) and was classified as a hydric soil. DP01u is located adjacent to DP01w between the wetland swale and Highway 12. The soil profile revealed six inches of olive-brown (2.5Y 4/3) sandy clay, over eight inches of greyish brown (2.5Y 5/2) silty clay. This soil did not meet the criteria for any hydric soil indicators. DP02w is in the southern portion of a wetland swale. The soil profile revealed a dark greyish brown (2.5YR 4/2) silty clay, on top of a dark greyish brown clay with 30% gleyed depletions and 3% strong brown redoximorphic concentrations in the matrix. This soil met the criteria for depleted matrix (F3) and was classification as a hydric soil. DP02u was located adjacent to DP01w between the wetland swale and Highway 12.

Mitigation Credit Summary: All Sites — Table 8 summarizes the estimated wetland credits at all three sites based on the USACE-approved credit ratios and the wetland delineations completed in July 2020. Table 8 also includes credits already approved from the Treasure County Line site. A wetland debit summary from the Volborg — North and South project and Forsyth Northwest project are provided in Table 8. With all sites combined, the credits generated are still 6.26 short of the mitigation credits required to offset losses from these two construction projects. This is a substantial decrease from the 1.82 net credits reported in 2019, and is mainly attributed to the recent shift in how the USACE is awarding credit for the palustrine aquatic bed wetland type.

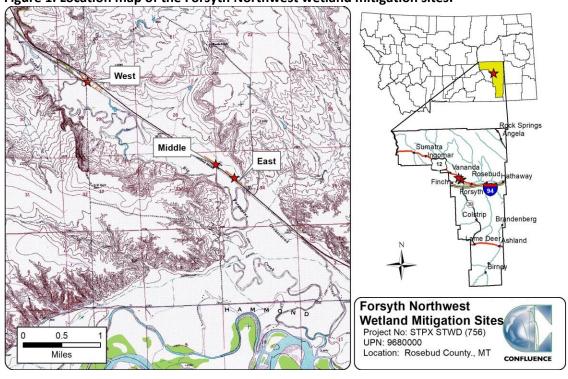
Table 8. Credit/Debit Summary for the Forsyth - Northwest Project

Project Site	Actual Acres	Туре	Debit Ratio	Debit Acres
Volborg – North and South	6.80	Debit	1.5:1	10.20
FNW Previously Mitigated	1.78	Debit	1:1 ^(a)	1.78
FNW Remaining	0.40	Debit	2:1	0.80
Total	8.98	Total Debits		12.78
Mitigation Site	Actual Acres	Mitigation Type	Credit Ratio	Credit Acres
	1.47	Creation Credit	1:1	1.47
Site 1:	0.13	Preservation Credit	4:1	0.03
West	3.16	Upland Buffer Credit	5:1	0.63
	8.95	Open Water Credit	TBD	TBD
Site 2:	0.58	Creation Credit	1:1	0.58
Middle	1.22	Upland Buffer Credit	5:1	0.24
Site 3:	0.56	Creation Credit	1:1	0.56
East	2.18	Upland Buffer Credit	5:1	0.44
Site 4:	1.74	Previous Creation Credit	1:1	1.74
Treasure County Line	4.15	Upland Buffer Credit	5:1	0.83
Total	24.14	Total Credits		6.52
Net Credits				

⁽a) Wetland Mitigation Monitoring Plan, Forsyth-Northwest (2012) indicates credits created at the FNW-Treasure County Line site will be applied to FNW impacts at 1:1 ratio as mitigation site was constructed prior to impacts.

Maps, Plans, Photos

Figure 1. Location map of the Forsyth Northwest wetland mitigation sites.



Project Area Maps/Figures: See Appendix A.

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

Photos: See Appendix C.

Plans: See Appendix D of 2013 Monitoring Report.

https://www.mdt.mt.gov/other/webdata/external/planning/wetlands/2013_REPORTS/FORSYTH_NORTHWEST 2013 FINAL.PDF

<u>Conclusions</u> - Formal performance standards were not developed as part of the mitigation plan for these sites. All three sites have developed wetland habitat as intended with positive indicators for wetland vegetation, soils, and hydrology. All sites are stable and have less than 5 percent total noxious weed cover. The West site has developed a large area of open water. In 2020, this area was removed from the wetland acreage and was not used to calculate mitigation credits. Options for inclusion of open water into the crediting scheme are pending. The East site is functioning as designed in the areas that have developed wetland characteristics, but the middle portion of the site, which was originally intended to be wetland, remains as upland. The Middle site appeared to be drier than in previous years, as was evident by shifts in the vegetation community composition and less obvious hydric soil indicators. In 2020, the FNW mitigation sites have experienced a reduction in mitigation credits required to satisfy the 12.78 acres of wetland debits (Table 8) created by the Volborg – North and South and Forsyth Northwest construction projects.

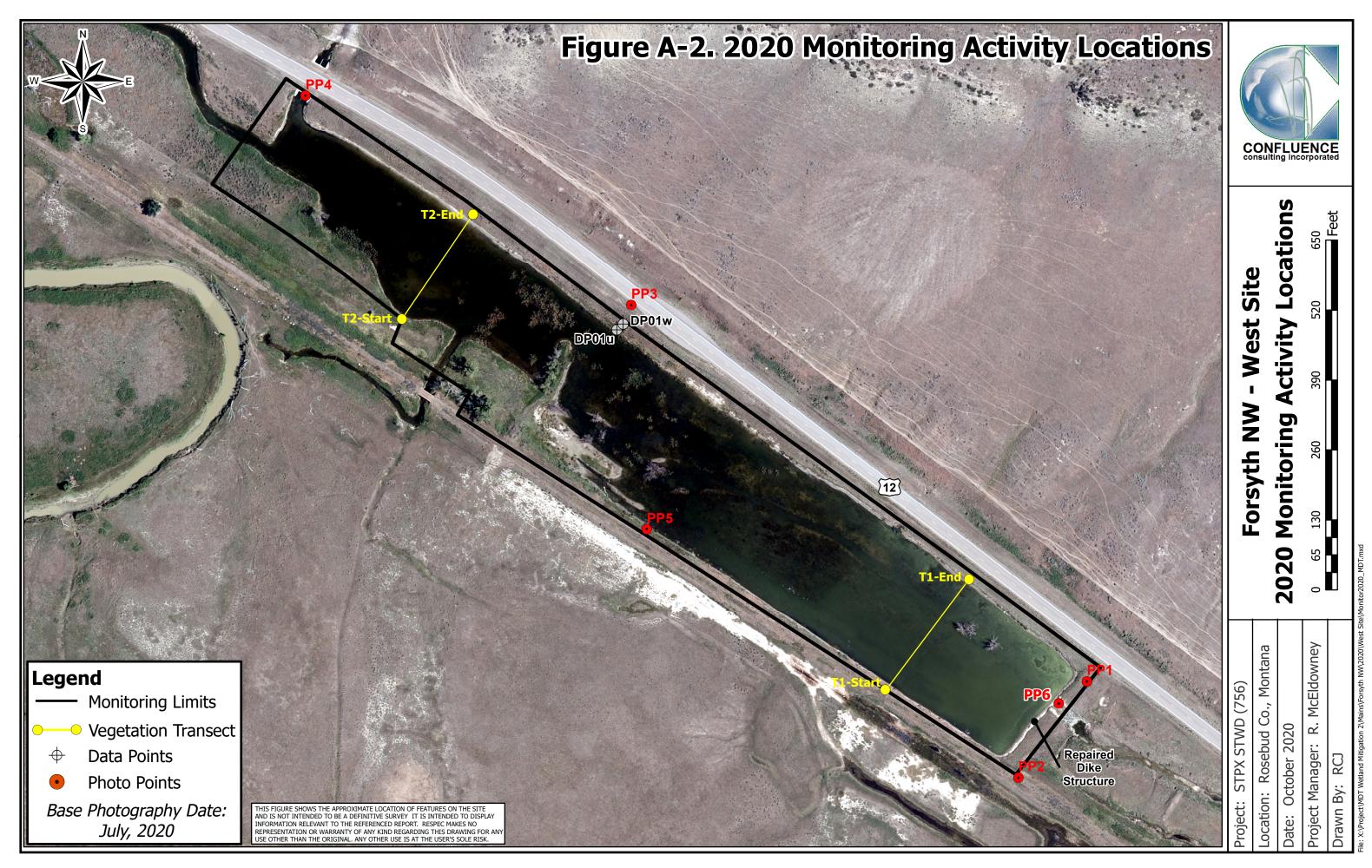
References

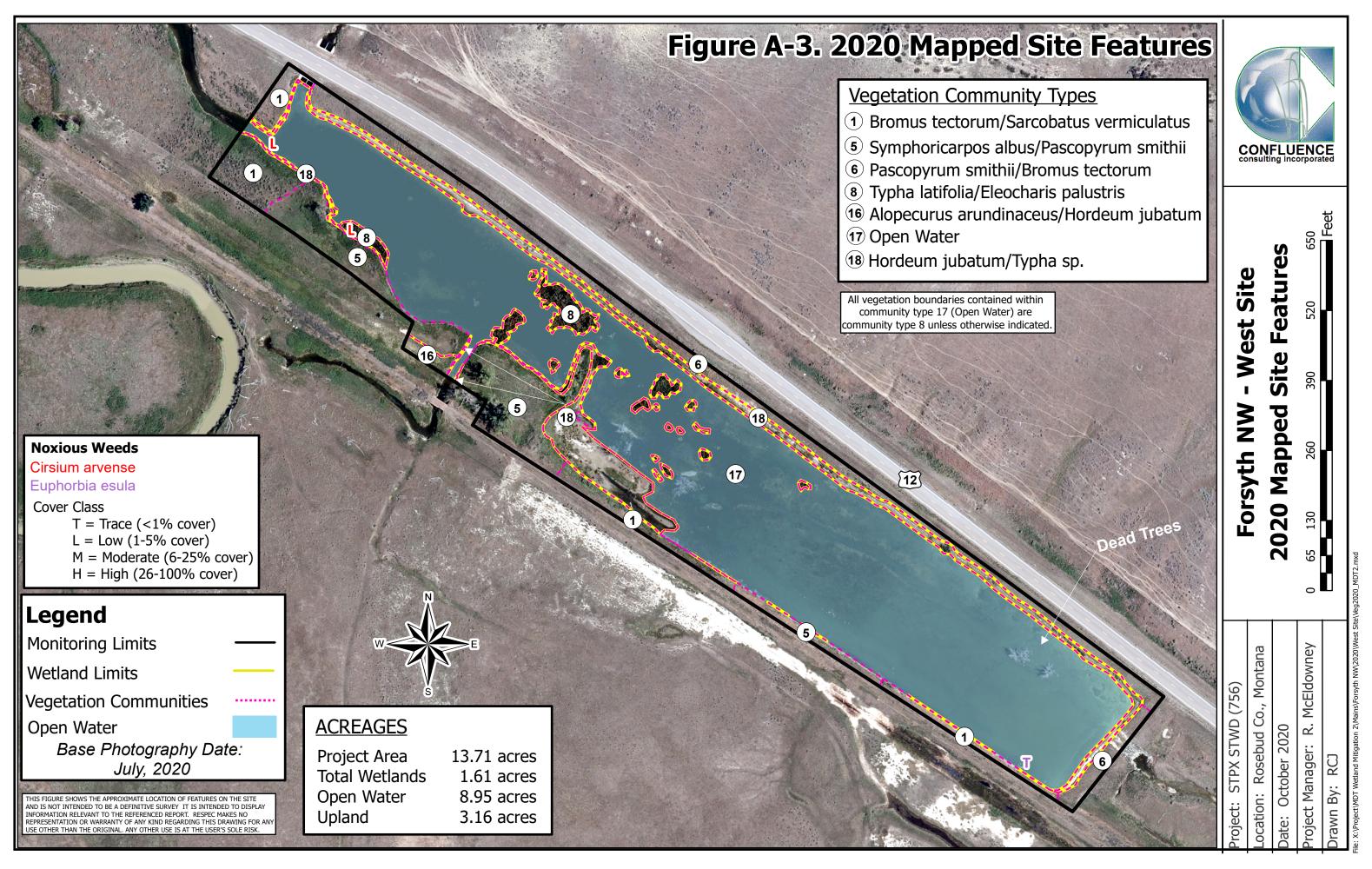
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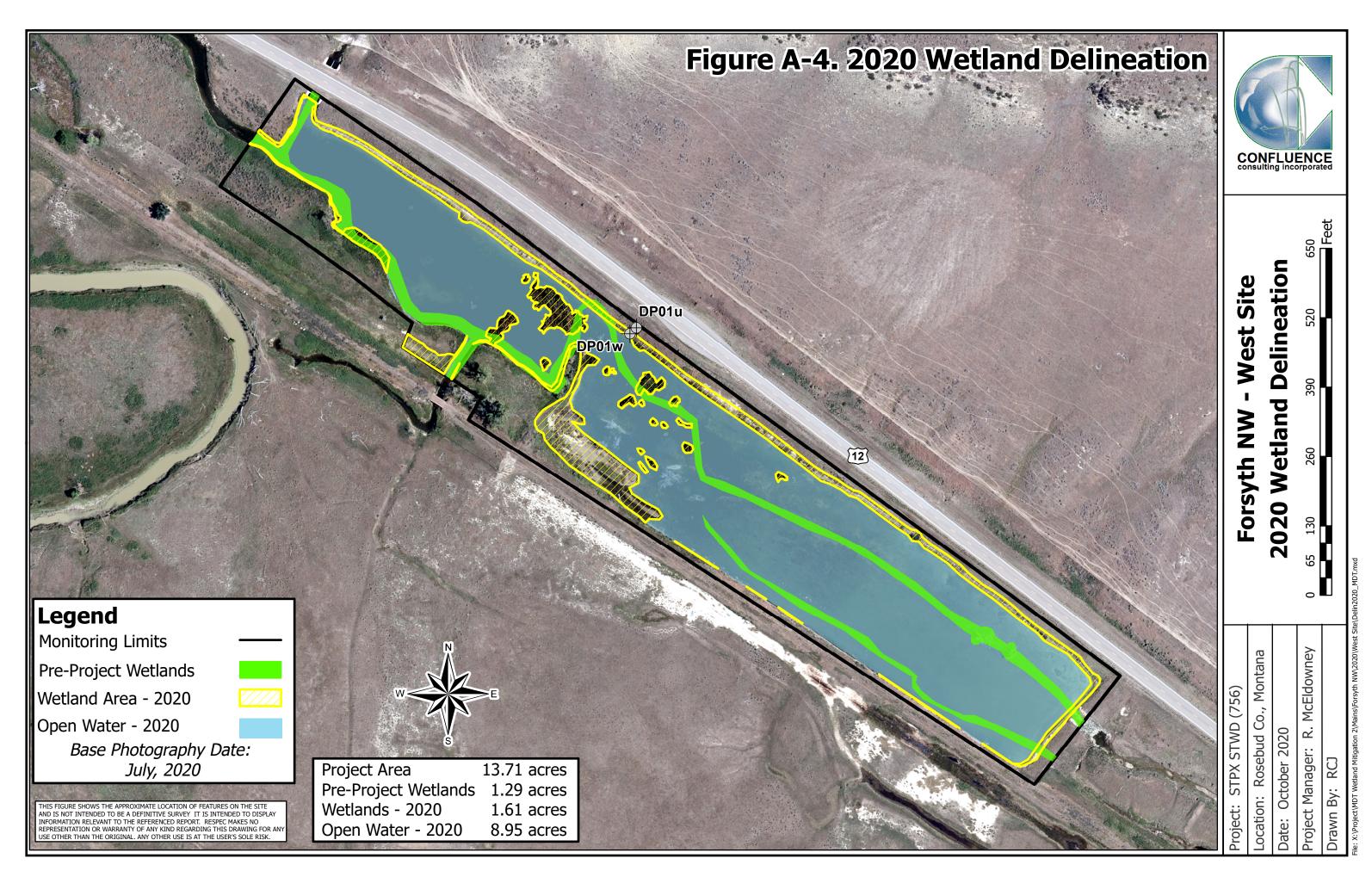
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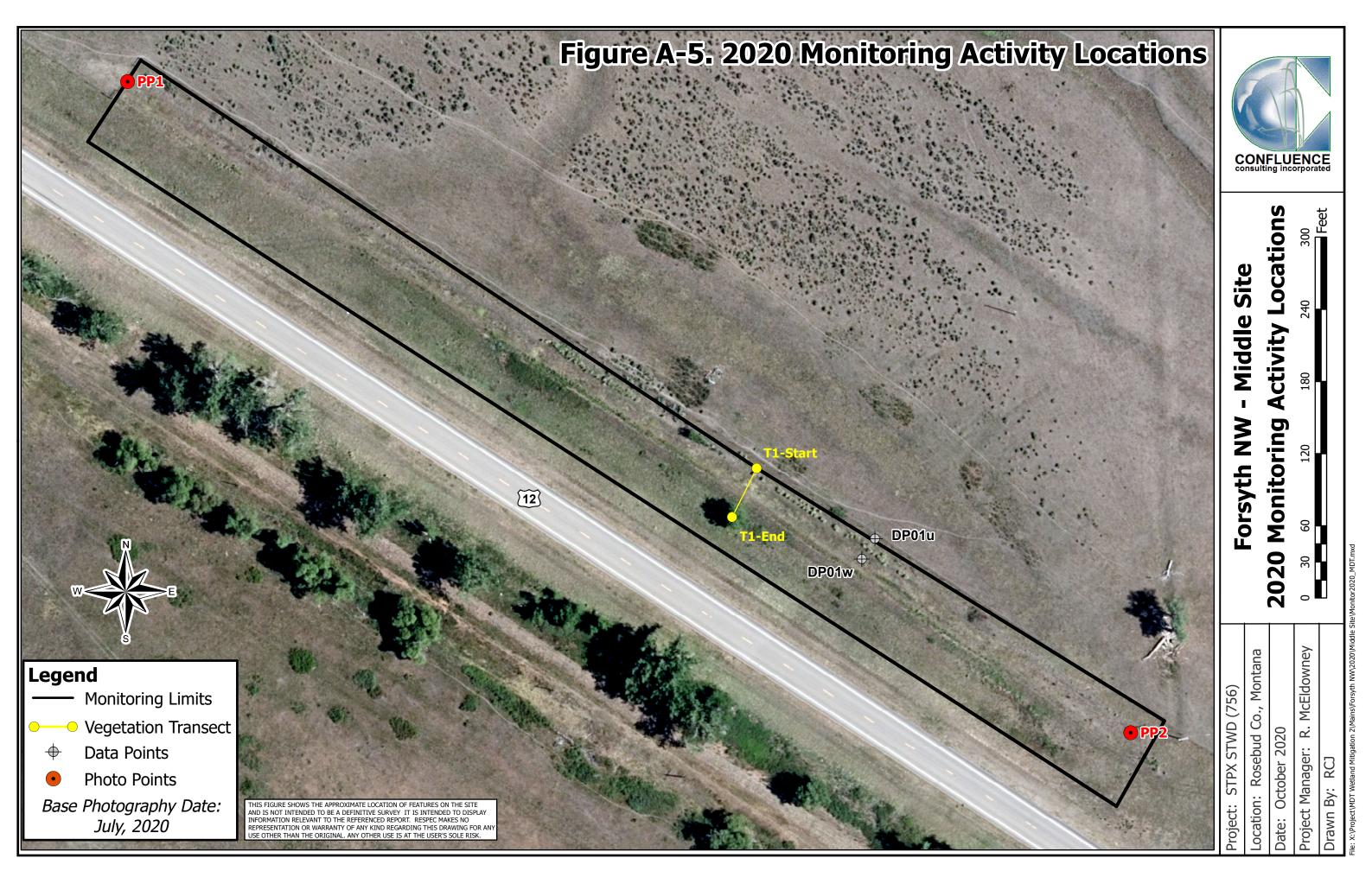
APPENDIX A PROJECT AREA MAPS

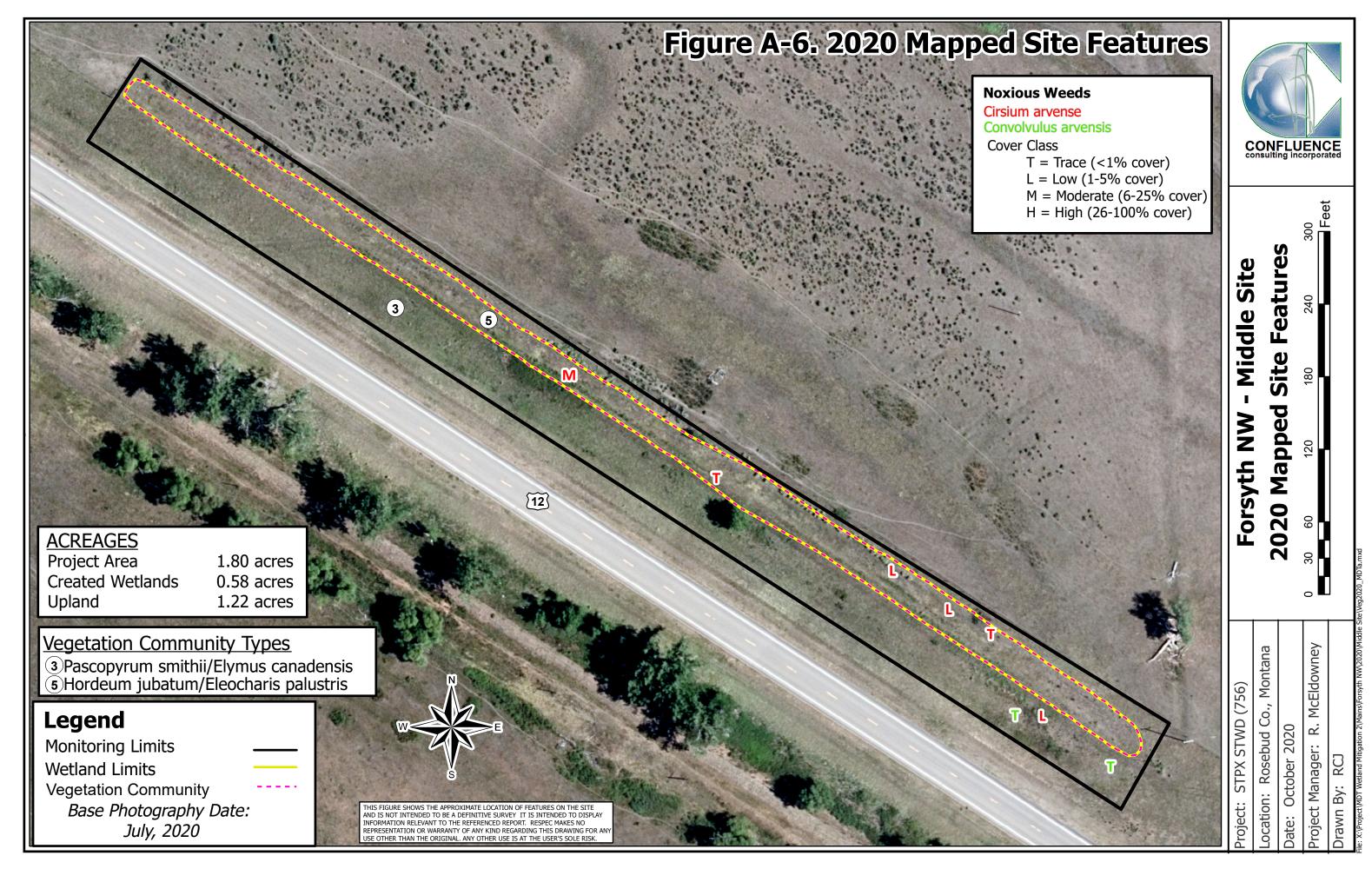
MDT Wetland Mitigation Monitoring Forsyth Northwest – West, Middle, and East Sites Rosebud County, Montana

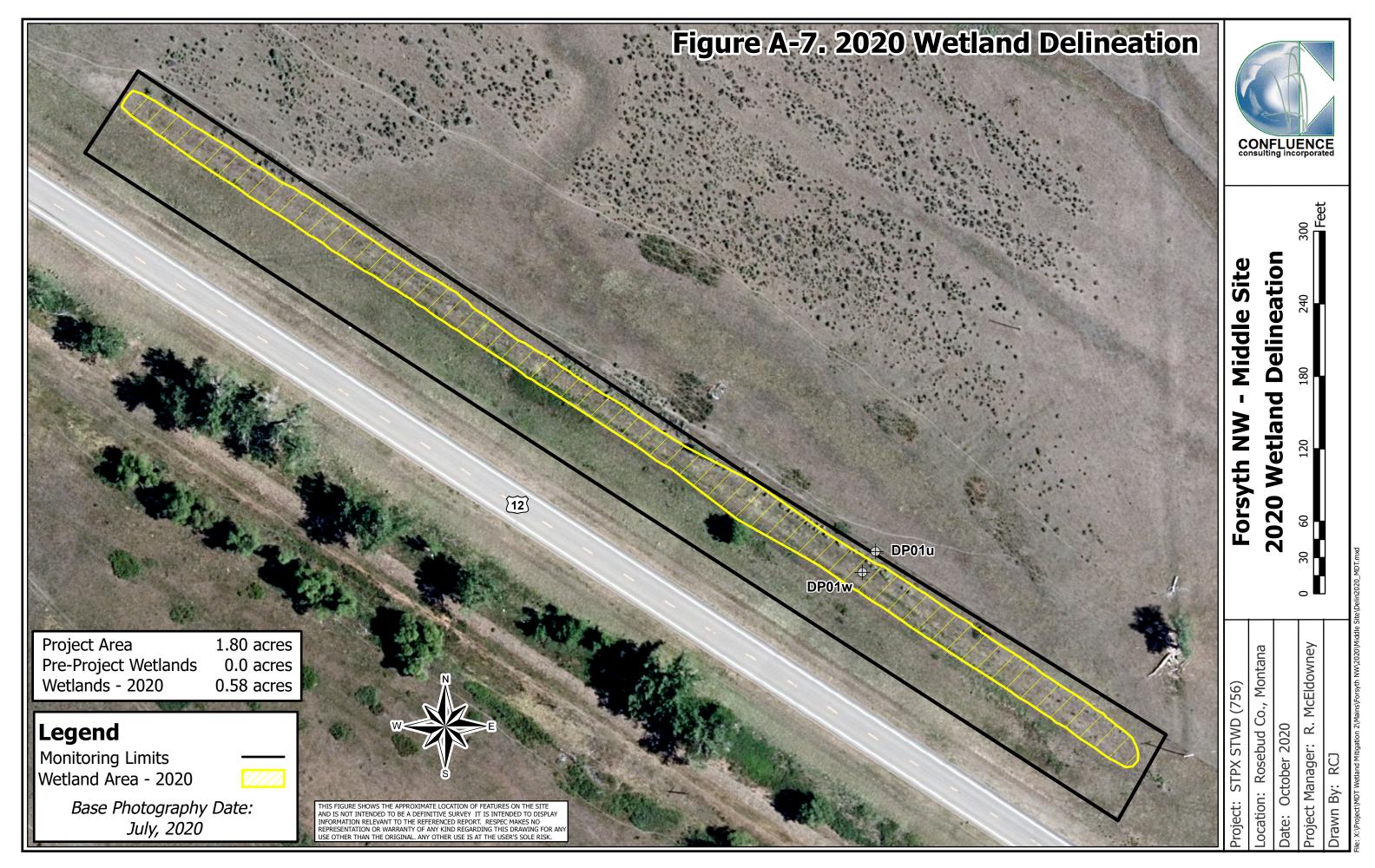


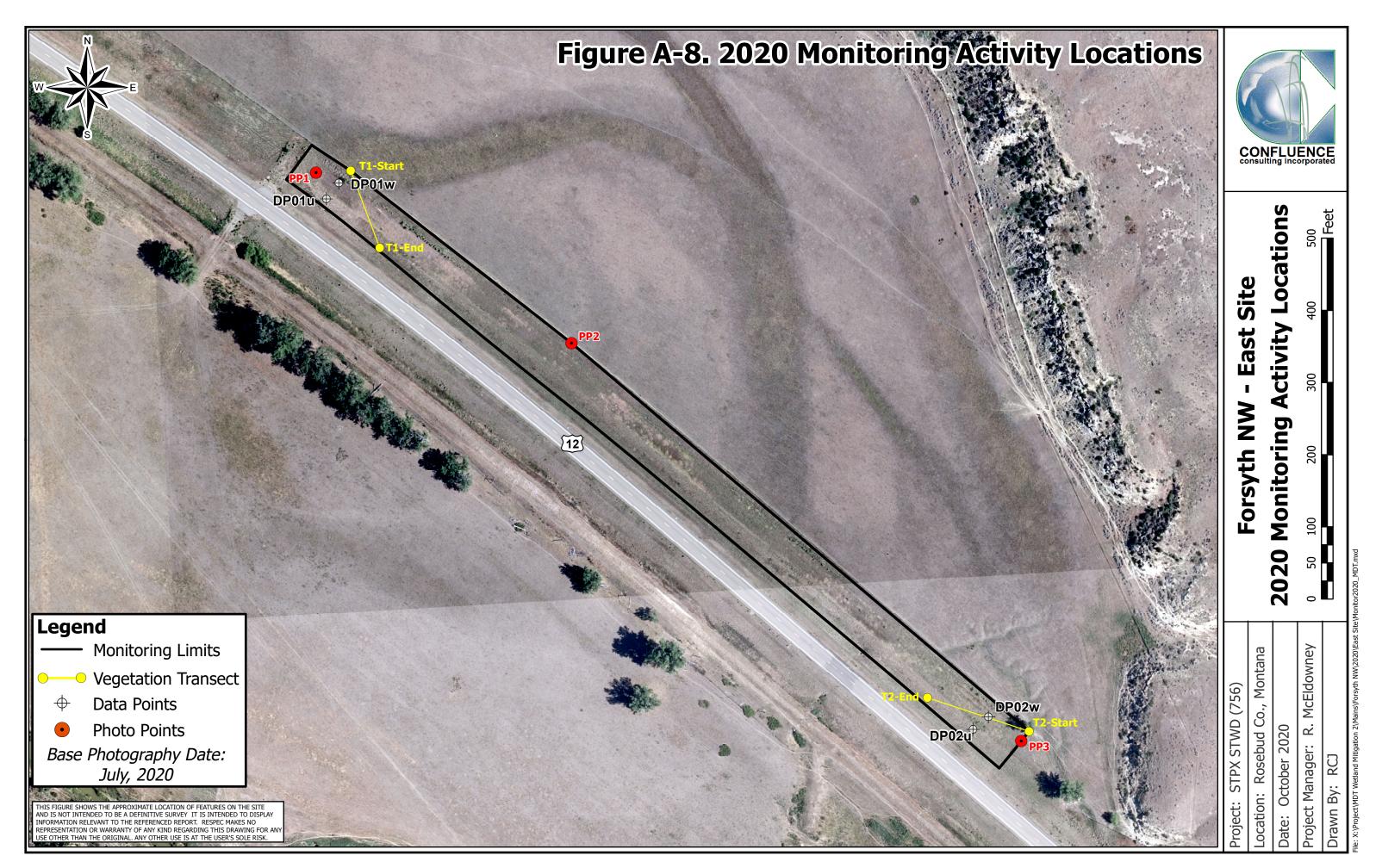


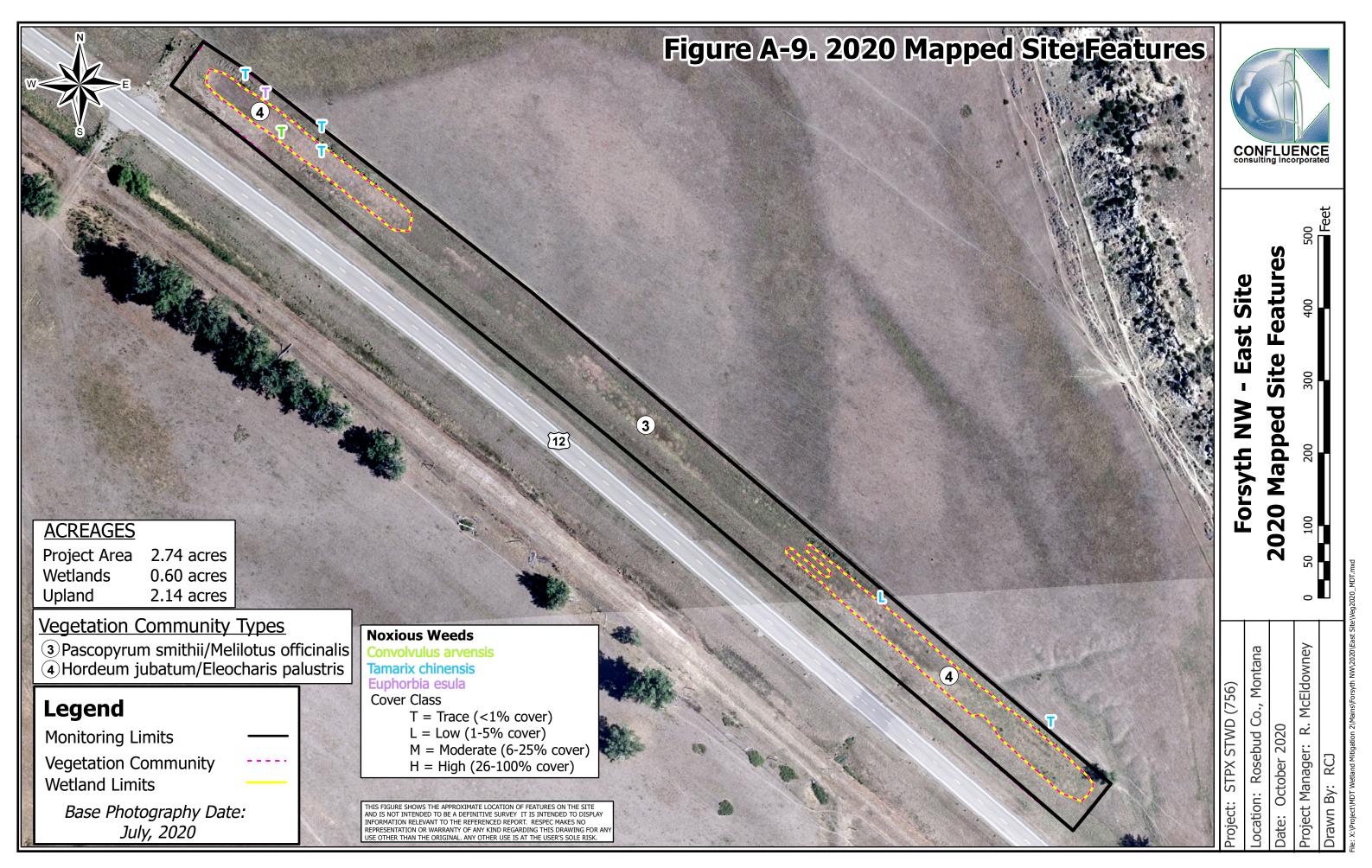


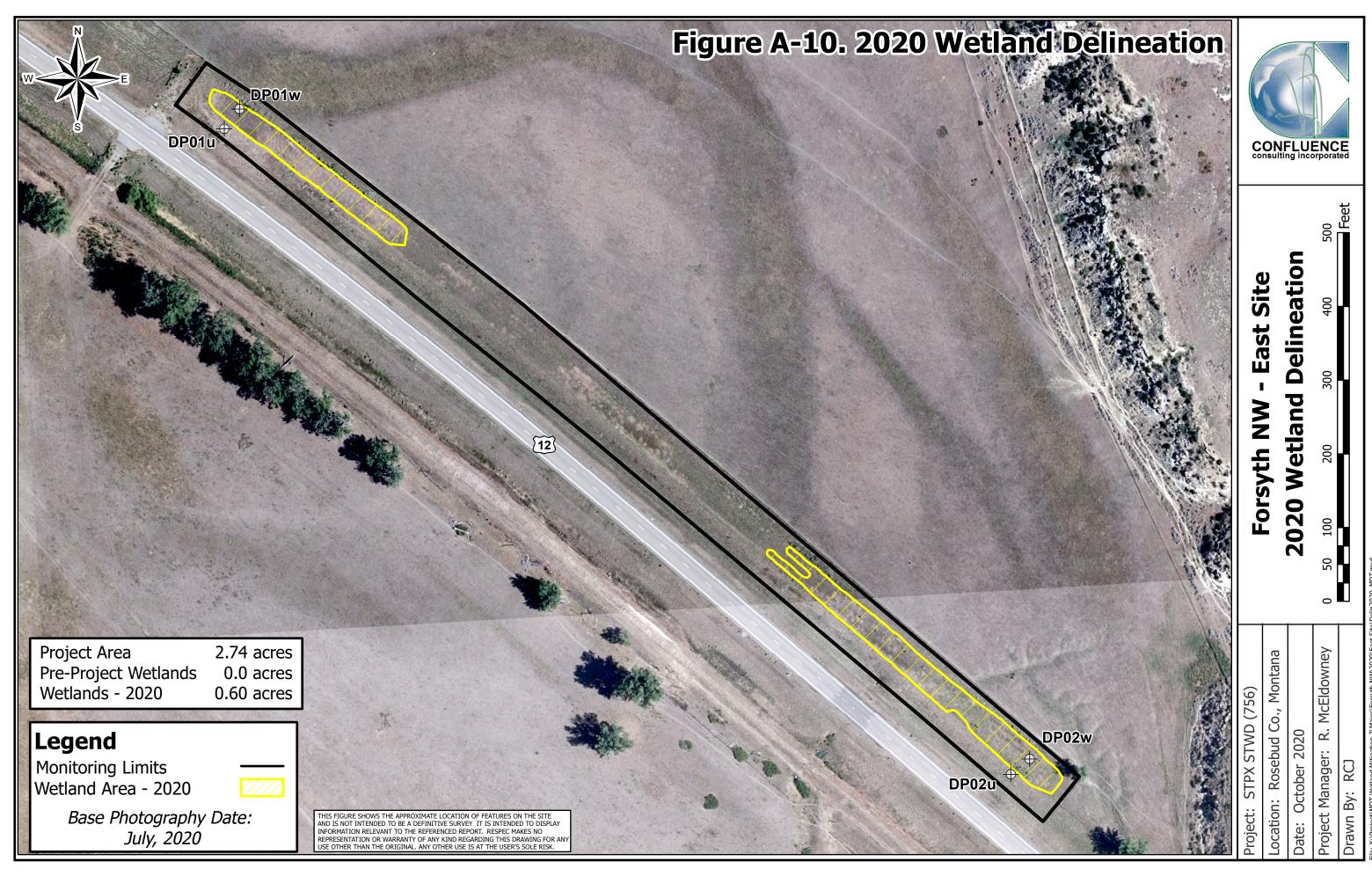












APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Forsyth Northwest – West, Middle, and East Sites Rosebud County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Forsyth NW - WestAssessment Date/Time
Person(s) conducting the assessment: R. Jones
Weather: Partly sunny, 90 degrees F Location: ~15 miles NW of Forsyth
MDT District: Glendive Milepost: RP 280 on US 12
Legal Description: T <u>7N</u> R <u>39E</u> Section(s) 20 & 29
Initial Evaluation Date: 8/15/2013 Monitoring Year: 8 #Visits in Year: 1
Size of Evaluation Area: 13.71 (acres)
Land use surrounding wetland:
Agriculture, grazing, US 12
HYDROLOGY
Surface Water Source: Big Porcupine Cr., E.Spring Coulee, runoff, seasonally high ground water
Inundation: Average Depth: 1 (ft) Range of Depths: 0.5-5 (ft)
Percent of assessment area under inundation: 80 %
Depth at emergent vegetation-open water boundary: 2 (ft)
If assessment area is not inundated then are the soils saturated within 12 inches of surface:No
Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc <u>:</u>
Majority of the wetland area inundated in 2020. Wetland fringe around open water displayed
saturated soils with salt crusts, and contained occasional drift deposits around the high water mark.
Groundwater Monitoring Wells
Record depth of water surface below ground surface, in feet.
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:
Hydrologic sources incude Big Porcupine Creek, East Spring Coulee, and a high water table.
Mitigation area receives surface water from East Spring Creek Coulee and from periodic flooding of Big Porcupine Creek. The majority of the site was inudated during the 2020 site visit. The site has been obviously inudated for extended periods of time as evidenced by drowned woody vegetation and an absence of herbaceous vegetation around the edges of the open water.

VEGETATION COMMUNITIES

Site Forsyth NW - West

(Cover Class Codes $\mathbf{0} = < 1\%$, $\mathbf{1} = 1-5\%$, $\mathbf{2} = 6-10\%$, $\mathbf{3} = 11-20\%$, $\mathbf{4} = 21-50\%$, $\mathbf{5} = >50\%$)

Community # 1 Co	mmunity Type:	Bromus tectorum / Sarcobatus ve	rmiculatus Acres:	0.77
Species	Cover class	Species	Cover class	
Bare Ground	2	Bassia scoparia	1	
Bromus inermis	1	Bromus tectorum	2	
Chenopodium album	1	Elymus repens	1	
Euphorbia esula	1	Hordeum jubatum	2	
Pascopyrum smithii	3	Poa pratensis	1	
Sarcobatus vermiculatus	1	Schedonorus pratensis	2	
Thlaspi arvense	1			

Comments:

Bromus tectorum cover has been reduced from previous years.

Community # 5	Community Type:	Symphoricarpos albus / Pascopyru	ım smithii Acres:	<u>1.37</u>
Species	Cover class	Species	Cover class	
Bare Ground	1	Bassia scoparia	1	
Bromus inermis	1	Bromus japonicus	1	
Chenopodium album	1	Cirsium arvense	1	
Eleocharis lanceolata	1	Elymus repens	1	
Glycyrrhiza lepidota	1	Hordeum jubatum	1	
Pascopyrum smithii	5	Poa compressa	2	
Poa pratensis	2	Sarcobatus vermiculatus	1	
Symphoricarpos albus	2	Thlaspi arvense	1	

Comments:

Community # 6	Community Type:	Pascopyrum smithii / Bromus tectoru	<u>um</u>	Acres:	<u>1.02</u>
Species	Cover class	Species	Cover class	3	
Bare Ground	1	Bassia scoparia	0		
Bromus arvensis	1	Bromus japonicus	0		
Bromus tectorum	1	Chenopodium album	1		
Elymus canadensis	1	Elymus lanceolatus	1		
Elymus trachycaulus	1	Helianthus annuus	0		
Hordeum jubatum	2	Hordeum marinum	0		
Lepidium perfoliatum	1	Linum lewisii	0		
Melilotus officinalis	0	Pascopyrum smithii	5		
Thlaspi arvense	0				
Comments:					
Bromus tectorum cover ha	as been significantly red	duced from previous years.			
Community # 8	Community Type:	Typha latifolia / Eleocharis palustris		Acres:	0.36
Species	Cover class	Species	Cover class	3	
Eleocharis palustris	3	Open Water	2		
Populus deltoides	1	Salix amygdaloides	1		
Schoenoplectus acutus	0	Schoenoplectus maritimus	0		
Sonchus arvensis	1	Spartina pectinata	1		
Typha angustifolia	3	Typha latifolia	4		
Comments:					
Community # 16	Community Type:	Alopecurus arundinaceus / Hordeum	n jubatum	Acres:	<u>0</u>
Species	Cover class	Species	Cover class	3	
Alopecurus arundinaceus	s 4	Bare Ground	1		
Hordeum jubatum	4	Rumex crispus	3		
Sagittaria cuneata	2				
Comments:					
Community # 17	Community Type:	Open Water / Aquatic macrophytes	4	Acres:	<u>8.9</u>
Species	Cover class	Species	Cover class	,	
Aquatic macrophytes	0	Eleocharis palustris	0		
Open Water	5	Schoenoplectus maritimus	1		
Typha angustifolia	1	Typha latifolia	1		
Comments:					

Community #	<u>18</u>	Community Type:	Hordeum jubatum / Typha sp.	Acres:	0	
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Species	Cover class	Species	Cover class
Bare Ground	5	Chenopodium album	1
Eleocharis palustris	1	Elymus trachycaulus	0
Grindelia squarrosa	1	Hordeum jubatum	2
Open Water	1	Polygonum aviculare	0
Populus deltoides	0	Puccinellia nuttalliana	1
Rumex crispus	0	Salicornia rubra	1
Schoenoplectus maritimus	2	Typha angustifolia	2
Гурha latifolia	1		

Comments:

This community type was created to replace Community Type 9, Eleocharis palustris/Open Water as a result of the need to classify open water as it's own community type, and the need for a new wetland community that fringes open water.

Total Vegetation Community Acreage

12.42

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

VEGETATION TRANSECTS

Transect Number: <u> </u>		_	irection from Start:25	
Ending Station	14	Community Type:	Bromus tectorum / Sarcobatus	s vermiculatus
Species		Cover class	Species	Cover class
Bare Ground		3	Bromus tectorum	4
Pascopyrum smithii		3	Poa pratensis	1
Ending Station	274	Community Type:	Open Water / Aquatic macrop	hytes
Species		Cover class	Species	Cover class
Ending Station	282	Community Type:	Hordeum jubatum / Typha sp.	
Species		Cover class	Species	Cover class
Chenopodium album		1	Eleocharis palustris	1
Elymus trachycaulus		3	Hordeum jubatum	4
Rumex crispus		2	Schoenoplectus maritimus	1

Transect Number: 2		_ Compass Di	rection from Start: 2	<u>5</u>
Interval Data:				
Ending Station	10	Community Type:	Symphoricarpos albus / Paso	copyrum smithii
Species		Cover class	Species	Cover class
Bare Ground		1	Cirsium arvense	0
Eleocharis lanceolata		0	Elymus repens	4
Glycyrrhiza lepidota		1	Hordeum jubatum	1
Pascopyrum smithii		1	Poa compressa	4
Symphoricarpos albus		0		
Ending Station	248	Community Type:	Open Water / Aquatic macro	phytes
Species		Cover class	Species	Cover class
Eleocharis palustris		0	Open Water	5
Typha angustifolia		1		
Ending Station	252	Community Type:	Hordeum jubatum / Typha sp).
Species		Cover class	Species	Cover class
Bare Ground		5	Chenopodium album	1
Hordeum jubatum		2	Puccinellia nuttalliana	2
Salicornia rubra		1	Schoenoplectus maritimus	1
Ending Station	261	Community Type:	Pascopyrum smithii / Bromus	s tectorum
Species		Cover class	Species	Cover class
Bare Ground		2	Bromus arvensis	1
Bromus japonicus		3	Chenopodium album	2
Elymus lanceolatus		1	Hordeum jubatum	2
Lepidium perfoliatum		1	Melilotus officinalis	5
Pascopyrum smithii		3		
Transect Notes:				

PLANTED WOODY VEGETATION SURVIVAL

Fors\	/th	NΜ	/ - V	√est

Comments

No woody vegetation planted at site. Natural recruitment of cottonwoods and willows is occurring.

Forsyth NW - West

WILDLIFE

Birds

Were man-made nesting structures installed?	No No
If yes, type of structure:	
How many?	
Are the nesting structures being used?	No
Do the nesting structures need repairs?	No
Nesting Structure Comments:	

Species	#Observed	Behavior	Habitat
Cliff Swallow	10	FO, L	
Common Nighthawk	2	FO	
Coot	2		
Killdeer	2	FO	
Mourning Dove	4	FO	
Red-winged Blackbird	3	F, L	
Teal	2		
Western Meadowlark	1	FO, L	
Wilson's Phalarope	2	FO	
Yellow-headed Blackbird	d 2	F, L	
Bird Comments			

BEHAVIOR CODES

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

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
Coyote		Yes	No	No	
Fox		Yes	No	No	
Muskrat	1	Yes	No	No	
Northern Leopard Frog	1	No	No	No	
Toad	1	No	No	No	
White-tailed Deer	50	Yes	No	No	

Wildlife Comments:

PHOTOGRAPHS

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

Photograph Checklist:

- ☑ One photograph for each of the four cardinal directions surrounding the wetland.
- At least one photograph showing upland use surrounding the wetland. If more than one upland exists then take additional photographs.
- At least one photograph showing the buffer surrounding the wetland.
- ☑ One photograph from each end of the vegetation transect, showing the transect.

Photo #	Latitude	Longitude	Bearing	Description	
DP-1U	46.338947	-106.87472			
DP-1W	46.338915	-106.874771			
PP-1	46.336914	-106.871132	270	Photo Point 1 (Pano):	
PP-2	46.336468	-106.871811	350	Photo Point 2 (Pano):	
PP-3	46.339088	-106.874611	230	Photo Point 3 (Pano):	
PP-4	46.340237	-106.877312	210	Photo Point 4 (Pano):	
PP-5	46.337817	-106.874587	45	Photo Point 5 (Pano):	
PP-6	46.3368	-106.8714	300	Completed Dike:	
PP-6a	46.3368	-106.8714	120	Completed Dike:	
T-1 end	46.337456	-106.872063	205	Transect 1 end:	
T-1 start	46.33691	-106.872772	25	Transect 1 start:	
T-2 end	46.339561	-106.875854	205	Transect 2 end:	
T-2 start	46.339001	-106.87645	25	Transect 2 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
Excessive inundation in 2020 has dramatically affected wetland boundaries.
Functional Assessments
Complete and attach full MDT Montana Wetland Assessment Method field forms.
Functional Assessment Comments:

Maintenance

Were man-made nesting structure installed at this site?

If yes, do they need to be repaired?

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?

If yes, are the structures in need of repair?

No

If yes, describe the problems below.

The repaired dike was visually inspected during the site visit and photos taken. Water had clearly spilled over the spillway earlier in the spring/summer and the structure's overflow held up well to the flow of water. No damage to the dike was observed. Upland vegetation that was seeded following construction is doing well and no noxious weeds were noted on the dike.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW West	City/County: Rosebud	Sampling Dat	e: 7/8/2020
		State: Montana Sampling Poil	
Investigator(s): R. Jones			
Landform (hillslope, terrace, etc.): Hillside			
Subregion (LRR): LRR G Lat:			
Soil Map Unit Name: 138: Marvan silty clay, 0-2 percent slopes			pped
Are climatic / hydrologic conditions on the site typical for this time of y			
Are Vegetation, Soil, or Hydrology significant	y disturbed? Are "N	lormal Circumstances" present? Yes	<u> ✓</u> No
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If nee	ded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	g sampling point lo	cations, transects, important	features, etc.
Hydrophytic Vegetation Present? Yes No ✓ Hydric Soil Present? Yes No ✓ Wetland Hydrology Present? Yes No ✓ Remarks: Upland sample point adjacent to DP01w.	Is the Sampled A within a Wetland	Area d? Yes □ No ☑	
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domia % Cover: Specie		Dominance Test worksheet	
// Oover. Specie	s: Otalus	Number of Dominant Species that are OBL, FACW or FAC:	0 (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:	0.0 % (A/B)
		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 0 X 1 FACW species 0 X 2	0
		FACW species 0 X 2 FAC species 0 X 3	0
		FACU species 16 X4	64
Herbaceous Stratum Plot size (5 Foot Radius)	UPL	UPL species 24 X 5	120
Bromus japonicus 15 📝 Bromus tectorum 2	UPL	Column Totals 40 (A)	184 (B)
Chenopodium album 1	FACU		4.60
Elymus trachycaulus 4	FACU	Prevalence Index = B/A =	
Iva axillaris 2	FAC	Hydrophytic Vegetation Indicators	
Linum lewisii 1	UPL	1 - Rapid Test for Hydrophyti	c vegetation
Pascopyrum smithii 15	FACU	2 - Dominance Test is >50%	
		3 - Prevalence Index is <= 3.	0
		 4 - Morphological Adaptations supporting data in remarks or 	`
		sheet.	
		5 - Wetland Non-Vascular Pla	ants
		Problematic Hydrophytic Veg	etation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hyd present, unless disturbed or problema	
Percent Bare Ground 60		Hydrophytic Vegetation Present? Yes	□ NO 🗹
Remarks:			
BG/litter=60%			

US Army Corps of Engineers Great Plains - Version 2.0

SOIL Sampling Point: DP01u

Profile Desc	cription: (Describ	e to the de	pth need	led to docun	nent the i	ndicato	r or c	confirm the absence of indicators.)
Depth	Matrix				x Features			
(inches)	Color (moist)	%	Col	or (moist)	%	Type	<u> </u>	Loc ² <u>Texture</u> <u>Remarks</u>
0-07	2.5Y 4/3	98	<u>5YR</u>	4/6	1_	_C	_ <u>M</u> _	Sandy Clay Loam
0-07			5YR	3/4	1	С	М	Sandy Clay Loam
07-12	2.5Y 5/2	95	10YR	3/1	1	С	M	Clay
07-12			5YR	5/8	3	С	М	Clay
07-12			10YR	8/8	1	C	_M_	Clay
¹ Type: C=C	oncentration, D=D	epletion, RN	1=Reduc	ed Matrix, CS	=Covered	l or Coa	ted S	Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	licable to a	I LRRs,	unless other	wise note	ed.)		Indicators for Problematic Hydric Soils ³ :
Black Hi Hydroge Stratified 1 cm Mt Depleted Sandy M 2.5 cm Mt	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) (LRF uck (A9) (LRR F, G d Below Dark Surfa ark Surface (A12) Mucky Mineral (S1) Mucky Peat or Peat (G, H) ace (A11) t (S2) (LRR (S3) (LRR F		Sandy F Stripped Loamy I Loamy I Deplete Redox I Redox I High Pla	Bleyed Ma Redox (S5; I Matrix (S Mucky Min Gleyed Ma d Matrix (F Dark Surfa d Dark Su Depression ains Depre) 6) eral (F ² ttrix (F2 F3) ce (F6) rface (F ns (F8) ssions	(F16)	
Restrictive	Layer (if present)	:						
Type: Depth (in	ches).							Hydric Soil Present? Yes No ✓
		dox conce	ntration	s are nreser	nt in the s	oil ma	triy r	no requirements are met to qualify as hydric soil
	dicators.							no roquiromente ure mor te quain, de nyane com
HYDROLO	GY							
Wetland Hy	drology Indicator	s:						
Primary India	cators (minimum o	f one require	ed; check	all that apply	y)			Secondary Indicators (minimum of two required
	Water (A1)			Salt Crust				Surface Soil Cracks (B6)
	ater Table (A2)		L	Aquatic Inv				Sparsely Vegetated Concave Surface (B8)
Saturation	` '		_	Hydrogen		, ,		Drainage Patterns (B10)
	larks (B1)		L	⊥ Dry-Seaso				Oxidized Rhizospheres on Living Roots (C
	nt Deposits (B2)		L	_		es on L	iving	Roots (C3) (where tilled)
	posits (B3)		_		not tilled)			Crayfish Burrows (C8)
	at or Crust (B4)			Presence		•	C4)	Saturation Visible on Aerial Imagery (C9)
☐ Iron Dep	posits (B5)		L	_ Thin Muck				Geomorphic Position (D2)
Inundati	on Visible on Aeria	al Imagery (I	37)	Other (Exp	lain in Re	marks)		FAC-Neutral Test (D5)
☐ Water-S	tained Leaves (B9)						Frost-Heave Hummocks (D7) (LRR F)
Field Obser	vations:	_						
Surface Wat	er Present?	Yes 🔲	No	Depth (ind	ches):			
Water Table	Present?	Yes 🔲		Depth (inc				
Saturation P (includes cap		Yes	No	_ Depth (ind	ches):			Wetland Hydrology Present? Yes No
		ım gauge, n	nonitoring	y well, aerial p	ohotos, pre	evious i	nspec	ctions), if available:
Remarks: No	o evidence of we	tland hydr	ology ob	served.				

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW West		City/Cou	ınty: Ro	sebud		Sampling [Date:	7/8/2020
Applicant/Owner: MDT		•			State: Montai	na Sampling F	Point: DF	P01w
Investigator(s): R. Jones						7N		
Landform (hillslope, terrace, etc.): Shoreline								(%)· 3.5
Subregion (LRR): LRR G	l at:		46 :	338915	Long:	-106.874771	_ Clope	NAD 83
Soil Map Unit Name: 138: Marvan silty clay, 0-2 percent	_ Lat t slopes		10.0	200010	NVA/Lalaa	eification, Not I	Mapped	
Are climatic / hydrologic conditions on the site typical for this		0.1/		,, [INVVI clas	sincation:		
Are Vegetation, Soil, or Hydrology si	gnificantly	y disturbe	d?	Are "N	ormal Circumstance	s" present? Yo	es <u> </u>	_ No _ <u> </u>
Are Vegetation, Soil, or Hydrology n.	aturally pr	roblematio	c?	(If nee	ded, explain any an	swers in Remar	ks.)	
SUMMARY OF FINDINGS - Attach site map s	showing	g samp	ling po	oint lo	cations, transe	cts, importa	ınt feat	ures, etc.
		. v		Wetland	l? Yes _	_ ✓ No_[
Remarks: PEM, DEPRESSIONAL wetland. Sample p	oint loca	ted adja	cent to	open w	ater.			
VEGETATION - Use scientific names of plan	ts							
Absolute	Domiar		cator		Dominance Test	worksheet		
Tree Stratum Plot size (30) Foot Radius) % Cover:	Species	s? Stat	tus		Number of Dominathat are OBL, FAC		2	(A)
					Total Number of D Species Across A		2	(B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)					Percent of Domina That Are OBL, FA		100.0	% (A/B)
Sapinig/Siliub Stratum Piot Size (13 Poot Radius)				ľ	Prevalence Index	worksheet		
					Total % Cov	er of:	Multir	ply by:
					OBL species	44 X1		14
					FACW species			10
					FAC species FACU species			0
<u>Herbaceous Stratum</u> Plot size (5 Foot Radius)					UPL species			0
Chenopodium album 1		FACU	J					
Chenopodium rubrum 1		OBL			Column Totals	50 (A)	5	(B)
Eleocharis palustris 10	<u> </u>	OBL			Prevalence In	ndex = B/A =		1.16
Hordeum jubatum 2 Puccinellia nuttalliana 5		FACV	V		Hydrophytic Veg			
Puccinellia nuttalliana 5 Salicornia rubra 5		OBL OBL				Test for Hydroph	nytic Vege	etation
Schoenoplectus pungens 3		OBL			🗹 2 - Domina	ance Test is >50)%	
Spartina pectinata 3		FACV	V		✓ 3 - Prevale	ence Index is <=	3.0	
Typha angustifolia 20	✓	OBL	•		4 - Morpho	ological Adaptat	ions (Pro	vide
	V				supporting sheet.	data in remark	s or on se	eparate
							DI .	
						d Non-Vascular		
Woods Vine Construe					☐ Problemati	ic Hydrophytic V	/egetatior	n (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)					Indicators of hydric present, unless dist			
Percent Bare Ground 45					Hydrophytic Veg	etation Yes	s 🗸 N	10 🗆
Remarks:								
BG/litter=45%								

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SOIL Sampling Point: DP01w

Profile Des	cription: (Descrik Matrix	-	n neede		nent the i x Features		or or con	firm the absence of i	ndicators.)
(inches)	Color (moist)	%	Color	(moist)	%	Туре	¹ Loc	Texture	Remarks
0-12	10YR 5/1	70 1	0Y	2.5/1	20	D	<u>M</u>	Silty Clay	
0-12		1	0YR	4/6	10	С	M	Silty Clay	
¹ Type: C=C	oncentration, D=D	epletion, RM=	Reduced	d Matrix, CS	=Covered	d or Coa	ted San	d Grains. ² Locatio	n: PL=Pore Lining, M=Matrix.
	Indicators: (App								Problematic Hydric Soils ³ :
Histoso	l (A1)			Sandy 0	Sleyed Ma	trix (S4)	1 cm Muck	(A9) (LRR I, J)
	pipedon (A2)		[_	Redox (S5			_	rie Redox (A16) (LRR F, G, H)
	istic (A3)		_		l Matrix (S	,		_	ice (S7) (LRR G)
	en Sulfide (A4)	3 E)		_	Mucky Min				s Depressions (F16)
	d Layers (A5) (LRI uck (A9) (LRR F, G			_	Gleyed Ma d Matrix (F		:)	_ `	l outside of MLRA 72 & 73) /ertic (F18)
	uck (A9) (LRR F, G d Below Dark Surf		<u></u>	= :	d Matrix (r Dark Surfa			_	reπic (F18) it Material (TF2)
	ark Surface (A12)	400 (/111)		_	d Dark Su	, ,			ow Dark Surface (TF12)
_	Mucky Mineral (S1)	1	Ī		Depression	-	.,		plain in Remarks)
	Mucky Peat or Pea		H) [ins Depre		(F16)		ydrophytic vegetation and
5 cm Mi	ucky Peat or Peat	(S3) (LRR F)		(ML	RA 72 & 7	3 of LF	RR H)	wetland hy	drology must be present,
								unless dist	turbed or problematic.
	Layer (if present)	:							
Type:									
Depth (in									sent? Yes No
Remarks: P	rominent redoxir	norphic depl	etions a	and conce	ntrations	comm	on withi	n the matrix.	
HYDROLO)GY								
Wetland Hy	drology Indicator	s:							
Primary Indi	<u>cators (minimum o</u>	<u>f one required</u>	check a	all that appl	y)			Secondary I	ndicators (minimum of two required)
✓ Surface	Water (A1)		✓	Salt Crust	(B11)			Surface	Soil Cracks (B6)
✓ High Wa	ater Table (A2)			Aquatic Inv	/ertebrate	s (B13)		Sparsel	y Vegetated Concave Surface (B8)
✓ Saturati	on (A3)			Hydrogen	Sulfide Od	dor (C1))	Drainag	e Patterns (B10)
_	/larks (B1)			Dry-Seaso					d Rhizospheres on Living Roots (C3)
	nt Deposits (B2)			Oxidized F	•	res on l	_iving Ro	` '	e tilled)
✓ Drift De			_	•	not tilled)			= .	Burrows (C8)
	at or Crust (B4)			Presence		,	C4)	_	on Visible on Aerial Imagery (C9)
	posits (B5)		Ц	Thin Muck					rphic Position (D2)
	ion Visible on Aeria			Other (Exp	lain in Re	marks)			eutral Test (D5)
	Stained Leaves (B9)						<u> </u>	eave Hummocks (D7) (LRR F)
Field Obser		, , .		.		9			
Surface Wat				Depth (in			_		
Water Table				Depth (in		9			
Saturation P	resent? pillary fringe)	Yes 🗸 N	o	Depth (inc	ches):	С	<u>'</u> V	Vetland Hydrology Pr	resent? Yes No
	corded Data (strea	ım gauge, moı	itoring v	vell, aerial p	photos, pre	evious i	nspectio	ns), if available:	
Remarks: 3	in surface water	observed at	pit.						
I .									

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name Forsyth NW - West		2. MDT project#	ST	PP STWD (756	6)	Contr	Control# 9680000		
3. Evaluation Date 7/7/2020 4. Evaluators	R Jon	es 5.	Wetl	and/Site# (s)	Forsyth I	VW - West			
6. Wetland Location(s): T	39 E	Sec1 20	- т	7 N R	39 E	Sec2	29		
Approx Stationing or Mileposts RP 280 on US	12								
Watershed 14 - Middle Yellowstone	Natersh	ned/County Rosel	oud						
7. Evaluating Agency CCI for MDT				8. Wetland s	size acres			10.55	
Purpose of Evaluation				How assess		Measured	d e.a. bv		
☐ Wetlands potentially affected by MDT projec	t			9. Assesssn				10.55	
☐ Mitigation Wetlands: pre-construction				(AA) size (ac	•			-	
✓ Mitigation Wetlands: post construction				How assess	ed:	Measured	e.g. by	GPS	
☐ Other									
10. Classification of Wetland and Aquatic Habita	ıts in AA	1							
HGM Class (Brinson) Class (Cowardin)		Modifier (Coward	lin)	Water Re	aime	9,	% of AA		
Riverine Emergent Wetland			,	Permanent/F				7	
Riverine Emergent Wetland		Excavated		Seasonal/Int	ermittent			9	
Riverine Unconsolidated Botto	om	Diked		Seasonal/Int	ermittent			84	
11. Estimated Relative Abundance Commo									
12. General Condition of AA i. Disturbance: (use matrix below to determine [circle		riate response – see ins	struction	ns for Montana-li	sted noxiou	us weed and			
aquatic nuisance vegetation species (ANVS) lists)		Pred	ominant	conditions adjacent	to (within 50	0 feet of) AA			
Conditions within AA	natur hayed conve roads	aged in predominantly ral state; is not grazed, d, logged, or otherwise erted; does not contain s or buildings; and noxious d or ANVS cover is <=15%.	mod sele subj	In not cultivated, but erately grazed or ha ctively logged; or ha ect to minor clearing roads or buildings; r d or ANVS cover is	ayed or as been g; contains noxious	or logged; placement, hydrologica	subject to , grading, al alteration ensity; or n	avily grazed substantial fill clearing, or n; high road or oxious weed 80%.	
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <=15%.	lo	ow disturbance		low disturba	ince	moder	ate dis	turbance	
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, f placement, or hydrological alteration; contains few roads or building noxious weed or ANVS cover is <=30%.		moderate disturbance	m	oderate distu	rbance	high	n distur	bance	
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteratio high road or building density; or noxious weed or ANVS cover is >=30%.	hi	gh disturbance		high disturba	ince	high	n distur	bance	
Comments: (types of disturbance, intensity, seas Construction activities in 2017 to repair the dike structure moderate in 2018 and 2019, and reduced to low in 2018 and 2019.)	ture tem		sturba	nce rating at th	ne site to h	nigh in 2017	7, was re	educed to	
ii. Prominent noxious, aquatic nuisance, other ex	otic spe	cies:							
Euphorbia esula, Cirsium arvense		alian lander # **	-4						
iii. Provide brief descriptive summary of AA and AA includes existing and constructed wetlands withir and livestock grazing.				d Big Porcupin	e Creek. S	Surroundino	g land ir	cludes US 12	

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 Rating existence of additional vegetated classes? Rating >= 3 (or 2 if 1 is forested) classes NA NΑ NA Н 2 (or 1 if forested) classes NA NΑ NA М 1 class, but not a monoculture М <NO YES> L 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA Comments: Emergent wetland surrounding and within an open water area. 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 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 Functional Points and 1H .9H .8H .7M .3L .1L 0L Rating USFWS T&E list for Rosebud County Sources for 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 Ammannia robusta (S2) Secondary habitat (list Species) D S O D O S Great Blue Heron (S3) Incidental habitat (list species) 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 0L 1H .8H .6M .2L .1L Rating S2 and S3 Species: Functional Points and .7M .6M .5M .2L .1L 0L .9H Rating

Ammannia observed within AA in 2019.

Sources for documented use

																			Mode	erate		
bstantial (base	d on any	of the	followin	g [che	ck]):						Minii	mal (b	ased or	any of	the foll	owing	[check])):				
observations					•		• •	•		l)					rvations	durin	g peak u	ise peri	ods			
abundant wild	Ŭ		,				. 0						no wildli									
presence of e		•	•				ole in the	e surro	unding	area			adjacen									
interviews wit	h local b	oiologis	ts with k	nowle	dge of t	he AA					in	ntervie	ws with	local bi	ologists	with k	nowledo	ge of the	e AA			
oderate (based of observations common occu	of scatte	ered wil	dlife gro	ups o	r individ			•				eriods										
adequate adja	acent up	oland fo	od sour	ces																		
interviews wit	h local b	oiologis	ts with k	nowle	dge of t	he AA																
i. Wildlife hab rom #13. For other in terms of ermanent/per erms]) tructural iversity (see	class c of their	over to perce	be control	positi al/int	ered ever	enly d	istribut (see #	ted, th	ne mos Abbrev	t and I	east p s for su	revale urface \ = al	ent veg water	etate durati	d class ons ar	es m e as f	ust be	within : P/P =	20% of	f each		
13) class cover istribution (all egetated		Eve	en			Une	ven			Eve	en			Une	ven			Ev	en			
lasses) Duration 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	Α	P/P	S/I	T/E	А	P/P	S/I	T/E	Α		
ow disturbance t AA (see #12i)	Е	Е	Е	н	Е	Е	Н	н	E	Н	Н	М	Е	Н	М	М	Е	Н	М	М		
Moderate listurbance at AA see #12i)	н	Н	н	н	Н	Н	Н	М	Н	Н	M	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		
ii. Rating (i Evidence of v							above a	and t	he ma	V	Vildlife		ive at		ratin	g (ii)		points	s and r	rating)		
Cubatantial			-	<u> </u>	xcep	tional		_		High	1				Mo	derat	<u>:e</u>				Low	_
Substantial					1E					.91	+					.8H					.7M	
Moderate					.9⊦	1		L		.71	M					.5M					.3L	
Minimal					.6N	1				.41	M					.2L					.1L	
4D. General I build be used estorable due NA here	Fish F by fish to hat	labita (i.e.,	acks a	ng: (se is ints,	(Asses	ere als	so obs s funct by per sired	ion if	the A	A is u	sed b	y fisl	n or the	eexis]. Ift	ting s	ituati	on is "	correct	ctable'	' such	is not	e AA
Habitat Qu			own / S	uspe	ctedF	ish Sp	oec ie s	in AA	(usem	natrix t	o arrive	e at [c	heck t	ne fun	ctional	points	and ra	ating)				
Duration of surfac in AA	e water			P	emane	nt / Pere	ennial					Seas	onal / Ir	<u>itermitte</u>	ent				Tem	porary	/ Epheme	ral
Aquatic hiding / re escape cover	sting /		Optim	al	A	dequate		Pod	or	O	otimal		Adeq	uate		Poor		Optin	nal	Ade	equate	Р
Thermal cover on																						

i. Habitat Quality and	Habitat Quality and Known / Suspected Fish Species in AA (us									the funct	ional po	intsan	drating)					
Duration of surface water in AA		Pei	manent /	Perennia	l			Se	easonal /	Intermitten	t			Tem	porary/	Epheme	eral	
Aquatic hiding / resting / escape cover	Op	timal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Adeo	quate	Po	or
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	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially					0.4)								
ii. Modified Rating (NOTE: Modified score c a) Is fish use of the AA significantly reduced by current final MDEQ list of waterbodies in need c fishery or aquatic life support, or do aquatic nui: yes, reduce score in i above by 0.1: Modified	a culvert, f TMDL o sance pla	dik deve	e, or other elopment w	man ith li	n-made [′] s sted "Pro	bable Imp	aired	Úses" ind	cludir	ng cold or wa		e If	
b) Does the AA contain a documented spawning comments) for native fish or introduced game fis		_	er critical ha		If yes, a	•	he adj	usted sc	ore ir	ng area, etc. n i or iia abo			
iii. Final Score and Rating: 3 L	Comn	nen	ts: Nume	rous	s unide	ntified 3	-inch	fish ob	ser	ved during	g field sui	vey in 20	20.
14E. Flood Attenuation: (Applies only to wet channel or overbank flow, click NA her			t to flooding ed to 14F.)		in-chanr	el or over	bank f	low. If w	etlan	ds in AA are	not flooded	d from in-	
i. Rating (working from top to bottom, use the Estimated or Calculated Entrenchment (Rosge			v to arrive a					s and rati trenched		Entrench	ed-A, F, G	stream	
1994, 1996)	Slig	u y	stream typ		, 5, 5		tream			Littlefiell	types	o ir odini	
% of flooded wetland classified as forested and/or scrub/shrub	75	%	25-75%	, o	<25%	75%	25-	75% <	25%	75%	25-75%	<25%	
AA contains no outlet or restricted outlet	_11	Н	.9Н		.6M	.8H	.7	М	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.9	Н	.8H		.5M	.7M	.6	M .	4M	.3L	.2L	.1L	
Slightly Entrenched		T	Moderatel	y Ent	trenched				-	Entrenched			7
ER = >2.2 C stream type D stream type E stream	n type	+	ER = '			A	stream	type	E	R = 1.0 – 1.4 F stream type	e G	stream type	1
							<u> </u>						
2 x Bankfull D	epth	*	Bankfull l	Dept	ih V	44	4	Flood Bankfull	•	one Width lth			
Floodprone 70		anki idth	-				35	_	ntrer	chment	2		
ii. Are ≥10 acres of wetland in the AA subject to within 0.5 mile downstream of the AA (check)?		AN		n-ma	de featur	es which i	may b			damaged by	y floods loca	ated	
Surface water enters AA v on the SE end of the site b							ig Po	rcupine	e Cr	eek. Wate	er will spil	l over the	dike
14F. Short and Long Term Surface Waupland surface flow, or groundwater flow. 14G.) i. Rating (Working from top to bottom, upper top to bottom).	If no w	etlā	inds in the	e AA	are sul	oject to fl	oo din	gorpon	ding	, 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 Duration of surface water at wetlands within the AA			>5 acre feet	t			1.	1 to 5 acre	feet			≤1 acre foot	
Duration of Surface water at Wetarius Within the AA	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		.9Н		.8H	.8	Н	.6M	Ļ	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H		.8H		.7M	.71	M	.5M		.4M	.3L	.2L	.1L

Comments: Seasonal flooding from E. Spring Coulee contibute water to wetlands and the open water area.

	gh influ			Toxican ground														s, ortoxic and proc	
= low])	working			tom, us	e the n	natrix be	elow to	arrive a	at [checl	k] the fu							noderate,	
levels	within A	Α		·	com not	o delive pounds substar	levels of at levels tially imp of nutrien	of sedime such tha paired. M	ents, nutr at other fi linor sed icants, or resent.	unctions imentation r signs of	are on,	nutrient with po compour	s, or tox tential to ids such	cants or deliver that oth tion, sou	· AA rece high leve er function urces of r	eives or s els of sed ons are s	urroun iments ubstan or toxio	s ediment, ding land u , nutrients, tially impai cants, or si	use or red.
		tland veg ooding / p			Yes	≥ 70%	No	Yes	< 70	No		Yes	≥ 70	% No	0	Yes		0% No	
AA co	ntains n	o or rest	ricted o	utlet	11-	7	8H	.71	_	.5M	1	.5N		.41		.3L	T	.2L	
AA co	ntains u	nrestrict	ed outle	et	.9⊦	1 .	7М	.6N	1	.4M	1	.4N	1	.3	L	.2L		.1L	
Com	ments	Open wetal		ng wate	r was p	resent	across	entire s	ite in 20	020; we	tland ve	egetatio	n cove	is less	than 70	0 percei	nt in d	elineated	
draina		n the sho		bilizatior of a stand											tural or r		de		
		orking fro land strear		bottom,	use the	matrix l	pelow to			the fund							1		
shorelii		cies with s			Pern	nanent / I	Perennial	Daration		asonal / In				emporary	/ Epheme	eral			
≥ 65%						1H	1			.9H	1			.7	7М		1		
35-64%	0					.7N				.61	И				5M				
< 35%						.3L				.2L	-				.1L				
	. Produ		•	ood Chai	• •		and fish	habitat	ratings [check])									
		sh Habit (14D.iii.)	tat	G/H	eneral \	Vildlife	Habitat M	Rating	(14C.iii.))									
	E/	/H		Н			Н			м									
	N	Л		Н			М			м									
	L	_		М			М			L									
	N/	/A		Н		_	М			L									
wetlan subsu [see ir	nd comp rface ou	onent in the foot one for the foot one for fur	the AA; final thre rther de	to bottom Factor B ee rows p finitions o	= level ertain to of these	of biolog duratio	gical acti	vity ratir ace wat	ng from a er in the	above (14 AA, whe	4I.i.); Fa ere P/P,	ctor C =	whethe	or not t as previ	he AA co iously de	ontains a efined, ar	surfac nd A =	ce or	
A B C	H Yes	ligh No		nponent >5 a derate No		ow No	H Yes	igh No		ponent 1-5 lerate No		ow No	H Yes	yeg gh No		erate No		Low	
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L	
S/I	.9Н	.6M	.7H	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L	
T/E/A	.8Н	.5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L	
plant co control)	over, ≤ 1 ere an a core in	5% noxic verage ≥ ii above	ous wee 50 foot and adj	Modified d or ANV wide veg ust rating	S cover getated ι accordi	, and the upland b	at is not ouffer arc	subjecte ound ≥ 7 d Ratin	ed to per 5% of th g .7	iodic me e <i>AA cir</i> o	chanical	mowing			ess for v		.1		I
	ents.	Uplan	a putte	r betwee	en north	ern bo	undary	от АА а	na nigh	ıway gre	eater tha	an 50tt.							

i. Discharge Indicators The AA is a slope wetland Springs or seeps are known or observed Vegetation growing during domant season/drought Wetland occurs at the toe of a natural slope Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER											
iii. Rating (use the inform	nation from i a			uration at AA	Wetlands <u>FRC</u>	OM GROUND	WATER DISCH	HARGE OR WIT	TH WATER		
0.11				THAT IS I	RECHARGING	THE GROUN					
Criteria Groundwater Discharge or R	echarge		P/P 1H		S/I .7M		.4M	No.	ne L		
Insufficient Data/Information					.7101	NA					
Site hydrological Site hydrolo	logy is combi						nd rating)				
Replacement potential	AA contains or mature wetland or	fen, bog, w (>80 yr-old	varm springs d) forested ciation listed	AA does cited rar diversity (not contain per types and #13) is high cociation listed the MTNHP	previously structural or contains I as "S2" by	AA does	s not contain pe types or ass lictural diversit low-moderate	sociations ty (#13) is		
Estimated relative abundance (#11)	rare	commo n	abundant	rare	common	abundant	rare	common	abundant		
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L		
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L		
High disturbance at AA (#12i)	.8H	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L		
14L. Recreation/Education i. Is the AA a known or put here and proceed to ii. Check categorie Other iii. Rating (use the matrix	otential rec./e to the overall s es that apply	ed. site: (ch summary an	neck) Y nd rating page) V Education	N O	(if 'Yes' cont	tinue with the	e evaluation;	if 'No' then cli n-consumptiv			
Known or Potential Recreation							К	inown Pot	ential		
Public ownership or public e		•		-	uired)			.2H	.15H		
Private ownership with gener	ral public acces	s (no permis	ssion required)					.15H	.1M		
Private or public ownership v	without general	public acces	ss, or requiring	permission fo	or public acce	ess		.1M	.05L		
Comments: Property is owned by MI	DT, and is ea	asily acces	sible potenti	al exists for	bird and w	ildife viewir	ng opportun	ites.	<u>-</u>		
General Site Notes											

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Forsyth NW - West

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	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	Н	.9	1	9.50	✓
C. General Wildlife Habitat	М	.5	1	5.28	
D. General Fish Habitat	L	.3	1	3.17	
E. Flood Attenuation	М	.5	1	5.28	✓
F. Short and Long Term Surface Water Storage	Н	.9	1	9.50	V
G. Sediment/Nutrient/Toxicant Removal	М	.7	1	7.39	
H. Sediment/Shoreline Stabilization	М	.6	1	6.33	
Production Export/Food Chain Support	М	.7	1	7.39	
J. Groundwater Discharge/Recharge	М	.7	1	7.39	✓
K. Uniqueness	L	.3	1	3.17	
L. Recreation/Education Potential (bonus points)	Н	.15	NA	1.58	
Totals:		6.25	11	65.94	
Percent of Possible Score			56.82 %		

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 above)

I II III IV	
-------------	--

Forsyth NW - West Wetland Mitigation Site - 2013 - 2020 Vegetation Species List

Scientific Names	Common Names	GP Indicator Status ^(a)
Agropyron cristatum	Crested Wheatgrass	UPL
Alisma triviale	Northern Water-Plantain	OBL
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FACW
Amaranthus retroflexus	Red-Root	FACU
Ambrosia psilostachya	Perennial Ragweed	FACU
Ammannia robusta	Grand Redstem	OBL
Aquatic macrophytes	Aquatic macrophytes	NA
Artemesia biennis	Biennial Wormwood	FACU
Asclepias speciosa	Showy Milkweed	FAC
Atriplex argentea	Silverscale	FAC
Bassia scoparia	Mexican-Fireweed	FACU
Bromus arvensis	Japanese Brome	UPL
Bromus carinatus	California Brome	UPL
Bromus inermis	Smooth Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Carex sp.	Sedge	NA
Chenopodium album	Lamb's-Quarters	FACU
Chenopodium rubrum	Red Goosefoot	OBL
Cichorium intybus	Chicory	FACU
Cirsium arvense	Canadian Thistle	FACU
Comandra umbellata	Bastard-Toadflax	UPL
Convolvulus arvensis	Field Bindweed	UPL
Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia sophia	Herb Sophia	UPL
Distichlis spicata	Coastal Salt Grass	FACW
Echinochloa crus-galli	Large Barnyard Grass	FAC
Elaeagnus angustifolia	Russian-Olive	FACU
Eleocharis lanceolata	Dagger-Leaf Spike-Rush	FACW
Eleocharis palustris	Common Spike-Rush	OBL
Elymus canadensis	Nodding Wild Rye	FACU
Elymus hispidus	Intermediate Wheatgrass	UPL
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Euphorbia esula	Leafy Spurge	UPL
Glyceria elata	Tall Manna Grass	OBL
Glycyrrhiza lepidota	American Licorice	FACU
Grindelia squarrosa	Curly-Cup Gumweed	UPL
Helianthus annuus	Common Sunflower	FACU
Hordeum brachyantherum	Meadow Barley	FAC
Hordeum jubatum	Fox-Tail Barley	FACW
Hordeum marinum	Seaside Barley	FACU
Iva axillaris	Deer-root	FAC
Lactuca serriola	Prickly Lettuce	FAC
Lepidium perfoliatum	Clasping Pepperwort	FAC
Linum lewisii	Prairie Flax	UPL

Forsyth NW - West Wetland Mitigation Site - 2013 - 2020 Vegetation Species List

Scientific Names	Common Names	GP Indicator Status ^(a)
Melilotus officinalis	Yellow Sweet-Clover	FACU
Muhlenbergia asperifolia	Alkali Muhly	FDCW
Nassella viridula	Green Needle Grass	UPL
Pascopyrum smithii	Western-Wheat Grass	FACU
Phalaris arundinacea	Reed Canary Grass	FACW
Poa compressa	Flat-Stem Blue Grass	FACU
Poa palustris	Fowl Blue Grass	FACW
Poa pratensis	Kentucky Blue Grass	FACU
Polygonum aviculare	Yard Knotweed	FACU
Populus deltoides	Eastern Cottonwood	FAC
Puccinellia nuttalliana	Nuttall's Alkali Grass	OBL
Ratibida columnifera	Mexican Coneflower	UPL
Ribes aureum	Golden Currant	FACU
Ribes cereum	Wax Currant	UPL
Rosa arkansana	Prairie Rose	FACU
Rumex crispus	Curly Dock	FAC
Sagittaria cuneata	Arum-Leaf Arrowhead	OBL
Salicornia rubra	Red Saltwort	OBL
Salix amygdaloides	Peach-Leaf Willow	FACW
Salix fragilis	Fragile Willow	FAC
Sarcobatus vermiculatus	Greasewood	FAC
Schedonorus pratensis	False Meadow Rye Grass	FACU
Schoenoplectus acutus	Hard-Stem Club-Rush	OBL
Schoenoplectus maritimus	Saltmarsh Club-Rush	OBL
Setaria pumila	Yellow Bristle Grass	FACU
Sonchus arvensis	Field Sow-Thistle	FAC
Spartina pectinata	Freshwater Cord Grass	FACW
Sporobolis airoides	Alkali-Sacaron	FAC
Symphoricarpos albus	Common Snowberry	UPL
Tamarix chinensis	Salt-cedar	UPL
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Typha angustifolia	Narrow-Leaf Cat-Tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Xanthium strumarium	Rough Cockleburr	FAC
Yucca glauca	Small Soapweed Yucca	UPL

⁽a) 2018 National Wetland Plant List (USACE 2018) New species identified in 2020 are **bolded**.

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Forsyth NW - MiddleAssessment Date/Time	<u>//8/2</u> 020
Person(s) conducting the assessment: R. Jones	
Weather: sunny, 80 degrees F Location: ~8 miles NW of Forsyth	
MDT District: Glendive Milepost: ~262 on US 12	
Legal Description: T <u>7N</u> R <u>39E</u> Section(s) 33	
Initial Evaluation Date: 8/15/2013 Monitoring Year: 9 #Visits in Year: 1	
Size of Evaluation Area: 1.8 (acres)	
Land use surrounding wetland:	
Rangeland with evidence of grazing and Highway 12.	
HYDROLOGY	
Surface Water Source: Precipitation, runoff, and overflow from ditch	
Inundation: Average Depth: 0 (ft) Range of Depths: _0 (ft)	
Percent of assessment area under inundation:0 %	
Depth at emergent vegetation-open water boundary: 0 (ft)	
If assessment area is not inundated then are the soils saturated within 12 inches of surface:N	10_
Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc:	
Geomorphic position, surface soil cracks, water stained leaves.	
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:	
nydrology Notes.	
Soils not saturated during time of site visit.	

VEGETATION COMMUNITIES

Site Forsyth NW - Middle

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

Community # 3 Community Type: Pascopyrum smithii / Elymus canadensis Acres: 1.22

Species	Cover class	Species	Cover class
are Ground	0	Bromus arvensis	0
romus inermis	1	Bromus tectorum	1
henopodium album	1	Cirsium arvense	1
onvolvulus arvensis	1	Elymus canadensis	1
lymus elymoides	1	Elymus trachycaulus	1
ordeum jubatum	1	Lactuca serriola	1
num lewisii	1	Melilotus officinalis	1
ascopyrum smithii	4	Poa palustris	1
oa pratensis	1	Populus deltoides	1
atibida columnifera	1	Rumex crispus	1
arcobatus vermiculatus	1	Schedonorus pratensis	1
mphoricarpos albus	2	Thlaspi arvense	1
ragopogon dubius	1		

Comments:

Community # 5 Community Type: Hordeum jubatum / Eleocharis palustris Acres: 0.58

Species	Cover class	Species	Cover class
Bare Ground	2	Bromus arvensis	1
Deschampsia elongata	1	Eleocharis palustris	3
Elymus lanceolatus	1	Elymus repens	1
Elymus trachycaulus	1	Hordeum jubatum	3
Lactuca serriola	2	Nassella viridula	1
Pascopyrum smithii	2	Poa palustris	1
Populus deltoides	0	Puccinellia nuttalliana	1
Rumex crispus	1	Salix lutea	1
Schedonorus pratensis	2	Schoenoplectus maritimus	2
Tragopogon dubius	1		

Comments:

This community has been described as CT4 in previous years, but was changed due to Puccinellia nuttalliana being nearly absent, a reduction Eleocharis palustris, and and increase in FAC and FACU species.

Total Vegetation Community Acreage

1.8

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

VEGETATION TRANSECTS

Forsyth NW - Middle	Date:		te:	7/8/2020	
Transect Number: 1	c	ompass Di	rection from Start: 2	05	
Interval Data:					
Ending Station	¹⁴ Commu	nity Type:	Pascopyrum smithii / Elymu	us canadensis	
Species	Cover c	lass	Species	Cover clas	
Bare Ground		1	Bromus tectorum		
Chenopodium album		2	Elymus canadensis		
Elymus elymoides		1	Pascopyrum smithii		
Schedonorus pratensis		1	Tragopogon dubius		
Ending Station	26 Commu	nity Type:	Hordeum jubatum / Eleoch	aris palustris	
Species	Cover c	lass	Species	Cover clas	
Bare Ground		2	Deschampsia elongata		
Eleocharis palustris		0	Elymus lanceolatus		
Elymus repens		2	Elymus trachycaulus		
Hordeum jubatum		4	Lactuca serriola		
Nassella viridula		0	Poa palustris		
Puccinellia nuttalliana		0	Rumex crispus		
Schedonorus pratensis		4	Tragopogon dubius		
Ending Station	50 Commu	nity Type:	Pascopyrum smithii / Elymu	ıs sp.	
Species	Cover c	ass	Species	Cover clas	
Bare Ground		0	Bromus inermis		
Bromus tectorum		0	Chenopodium album		
Elymus canadensis		0	Elymus trachycaulus		
Hordeum jubatum		0	Pascopyrum smithii		
Poa pratensis		0	Populus deltoides		
Ratibida columnifera		0	Rumex crispus		
Schedonorus pratensis		2	Symphoricarpos albus		

Transect Notes:

Interval 2 (ending station 26) has transitioned from community type 5 (Puccinellia nuttalliana/Hordeum jubatum) to community type 4 (Hordeum jubatum/Eleocharis palustris).

PLANTED WOODY VEGETATION SURVIVAL

Forsyth	NW	- Mi	ddle

Comments

No planted woody vegetation. Young volunteer cottonwoods doing well around edge of wetland, especially on south side of east end.

Forsyth NW - Middle

WILDLIFE

Birds	
Were man-made nesting structures installed?	No_
If yes, type of structure:	
How many?	
Are the nesting structures being used?	No
Do the nesting structures need repairs?	No
Nesting Structure Comments:	

Species	#Observed	Behavior	Habitat	
Meadowlark	1			
Tree Swallow	4			
Bird Comments				

BEHAVIOR CODES

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

HABITAT CODES

 ${f AB}$ = Aquatic bed ${f SS}$ = Scrub/Shrub ${f FO}$ = Forested ${f UP}$ = Upland buffer ${f I}$ = Island

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

Mammals and Herptiles

Wildlife Comments:

Very little wildlife or sign of wildlife noted during the 2020 field survey.

Forsyth NW - Middle

PHOTOGRAPHS

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

Photograph Checklist:

- ✓ One photograph for each of the four cardinal directions surrounding the wetland.
- At least one photograph showing upland use surrounding the wetland. If more than one upland exists then take additional photographs.
- At least one photograph showing the buffer surrounding the wetland.
- ☑ One photograph from each end of the vegetation transect, showing the transect.

Photo #	Latitude	Longitude	Bearing	Description	
DP-1U	46.322733	-106.84196			
DP-1W	46.322687	-106.842006			
PP-1	46.322174	-106.840996	300	Photo Point 1:	
PP-2	46.323803	-106.844337	120	Photo Point 2:	
T-1 end	46.322754	-106.842438	25	Transect 1 end:	
T-1 start	46.322948	-106.842323	205	Transect 1 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	
Jolis	
✓ 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	
0.58 acres of wetlands delineated.	
Functional Assessments	
✓ Complete and attach full MDT Montana Wetland Assessment Method field forms.	
Functional Assessment Comments:	
Category 3 wetland.	

Maintenance

Were man-made nesting structure installed at this site?

If yes, do they need to be repaired?
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.
<u> </u>
N/A.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW Middle	City/County: Rosebud	Sampling	g Date:7/8/2020
Applicant/Owner: MDT		State: Montana_ Sampling	g Point: DP01u
Investigator(s): R. Jones	Section, Township, Range	:33 7N	39E
Landform (hillslope, terrace, etc.): Hillside			
Subregion (LRR): LRR G Lat:			
Soil Map Unit Name: 98: Harlem silty clay, 0-2 percent slopes, o	ccasionally flooded	NWI classification. No	t Mapped
Are climatic / hydrologic conditions on the site typical for this time of y			
Are Vegetation, Soil, or Hydrology significantl			
Are Vegetation, Soil, or Hydrology naturally p	rablemetic?	ad evaluis any anguera in Dom	165 110
SUMMARY OF FINDINGS – Attach site map showin			
Hydrophytic Vegetation Present? Yes ☐ No ☑			
Hydric Soil Present? Yes No ✓ Wetland Hydrology Present? Yes No ✓	is the Sampled Air	Yes No	<u> </u>
Remarks: Upland sample point located on hillslope adjacent to	o DP01w.		
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domial		Dominance Test worksheet	
Tree Stratum Plot size (30 Foot Radius) % Cover: Specie	1	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:	0.0 % (A/B)
Supringion as Statum 1 lot 5/26 (10 1 oot radius)		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 0 X1	0
		FACW species 0 X 2 FAC species 0 X 3	0
		FACU species 41 X 4	164
Herbaceous Stratum Plot size (5 Foot Radius)		UPL species 9 X 5	45
Bromus arvensis 1	FACU FAC	Column Totals 50 (A	A) 209 (B)
Lactuca serriola 2	FAC	, ,	4.18
Pascopyrum smithii 40	FΔCII	Prevalence Index = B/A =	
		Hydrophytic Vegetation Indicated 1 - Rapid Test for Hydro	
		2 - Dominance Test is >	
		3 - Prevalence Index is	
		 4 - Morphological Adapt supporting data in rema sheet. 	,
		5 - Wetland Non-Vascul	ar Plants
		Problematic Hydrophytic	
Woody Vine Stratum Plot size (30 Foot Radius)		dicators of hydric sil and wetlan	d hydrology must be
Percent Bare Ground 50		Hydrophytic Vegetation	'es □ NO ☑
Remarks:			
BG/litter=50%			

US Army Corps of Engineers Great Plains - Version 2.0

SOIL Sampling Point: DP01u

Profile Desc	ription: (Describe	to the dep	th needed to d	ocument the i	indicato	r or con	firm the absence of indicators.)
Depth	Matrix	0/		Redox Feature		Loc ²	Tautura Barradia
(inches)	Color (moist)		Color (moist)	_Type ¹		
0-01	2.5Y 4/1	100			-	;	Silty Clay Loam
01-13	2.5Y 4/2	99	7.5YR 5/8	3 1	С	M	Silty Clay
						_	
							
1		Latina DM	D. J J.M. J.				2 Properties Bl. Born Living M. Matri
	oncentration, D=Dep Indicators: (Applic					ted Sand	d Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol		able to all		ndy Gleyed Ma			1 cm Muck (A9) (LRR I, J)
	oipedon (A2)			ndy Gleyed Ma ndy Redox (S5			Coast Prairie Redox (A16) (LRR F, G, H)
	istic (A3)		=	pped Matrix (S			Dark Surface (S7) (LRR G)
\equiv	en Sulfide (A4)			my Mucky Mir)	High Plains Depressions (F16)
	d Layers (A5) (LRR I	=)	_	my Gleyed Ma			(LRR H outside of MLRA 72 & 73)
	ıck (A9) (LRR F, G, I		=	oleted Matrix (,	•	Reduced Vertic (F18)
	d Below Dark Surfac		_	dox Dark Surfa	-		Red Parent Material (TF2)
Thick Da	ark Surface (A12)		De	oleted Dark Su	ırface (F	7)	☐ Very Shallow Dark Surface (TF12)
Sandy N	lucky Mineral (S1)		Re	dox Depressio	ns (F8)		Other (Explain in Remarks)
	Mucky Peat or Peat (∋, H) Hig	h Plains Depre			³ Indicators of hydrophytic vegetation and
5 cm Μι	icky Peat or Peat (S	3) (LRR F)		(MLRA 72 & 7	73 of LF	RRH)	wetland hydrology must be present,
5 4 · · · ·							unless disturbed or problematic.
0.00	Layer (if present):						
Type:							Hydric Soil Present? Yes ☐ No 🗹
Depth (in							Hydric Soil Present? Yes No _ <u>✓</u>
Remarks: N	o hydric soil indica	ators obse	rved.				
HYDROLO	GY						
	drology Indicators:						
_	cators (minimum of o		d: check all that	apply)			Secondary Indicators (minimum of two required)
	Water (A1)			rust (B11)			Surface Soil Cracks (B6)
	ater Table (A2)			ic Invertebrate	s (B13)		Sparsely Vegetated Concave Surface (B8)
Saturation	` '			gen Sulfide O	,		Drainage Patterns (B10)
	larks (B1)		=	eason Water T			Oxidized Rhizospheres on Living Roots (C3)
_	nt Deposits (B2)			ed Rhizosphe			
	posits (B3)			ere not tilled)			Crayfish Burrows (C8)
	at or Crust (B4)			nce of Reduce		24)	Saturation Visible on Aerial Imagery (C9)
	posits (B5)			/luck Surface (,	Geomorphic Position (D2)
	on Visible on Aerial I	magery (B		(Explain in Re	` '		FAC-Neutral Test (D5)
_	tained Leaves (B9)	97 (-	,	(,		Frost-Heave Hummocks (D7) (LRR F)
Field Obser	, ,						
Surface Wat		es 🗆	No <u> </u>	h (inches):			
Water Table			No <u>V</u> Dept				
Saturation P			No <u>✓</u> Dept				/etland Hydrology Present? Yes No
(includes car	oillary fringe)						
Describe Re	corded Data (stream	gauge, mo	onitoring well, a	erial photos, pr	evious ii	nspection	ns), if available:
Remarks: No	evidence of wetla	and hydro	ogy observed				

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW Middle		_ City/County: Rose	ebud	Sampling Date:7/8	8/2020
Applicant/Owner: MDT			_{State:} Montana	_ Sampling Point: DP01w	V
Investigator(s): R. Jones		Section, Township	, Range:337	N 39E	
Landform (hillslope, terrace, etc.): Swale					1.75
			2687 Long:		
Soil Map Unit Name: 98: Harlem silty cla					
Are climatic / hydrologic conditions on the s					
Are Vegetation, Soil, or Hyd	irology significan	tly disturbed?	are "Normal Circumstances"	present? Yes No	ى
Are Vegetation, Soil, or Hyd	Irology naturally	problematic? (If needed, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS – Atta	ch site map showi	ng sampling poi	nt locations, transect	s, important features	s, etc.
		is the Samp	pled Area etland? Yes	<u>✓</u> No	
VEGETATION - Use scientific n					
Tree Stratum Plot size (30 Foot Rac	Absolute Domi		Dominance Test we		
Tiee Stratum Flot Size (50 Flot Nat	^{llus)} % Cover: Speci	es? Status	Number of Dominan that are OBL, FACW		
			Total Number of Dor Species Across All S		
Sapling/Shrub Stratum Plot size (1)	5 Foot Radius)		Percent of Dominant That Are OBL, FAC		A/B)
<u>Gapinigronias Gratani</u>) Toot Radias,		Prevalence Index v	vorksheet	
			Total % Cover		<u>y:</u>
			OBL species	42 X1 42	_
			FACW species FAC species	7 X2 14 10 X3 30	=
.			FACU species	1 X4 4	=
· ·	Foot Radius)	OPI	UPL species	0 X 5 0	
Carex nebrascensis Carex pellita	2 <u> </u>	OBL OBL	Column Totals	60 (A) 90	(B)
Chenopodium album	25 v	FACU		4.	
Eleocharis palustris	10	OBL	Prevalence Ind	<u> </u>	
Hordeum jubatum	5	FACW	Hydrophytic Vegeta	ation Indicators st for Hydrophytic Vegetatic	
Lactuca serriola	10	FAC		, , , ,	ווכ
Salix lutea	2 🗌	FACW		ce Test is >50%	
Schoenoplectus pungens	5	OBL	✓ 3 - Prevalend	ce Index is <= 3.0	
			supporting d	gical Adaptations (Provide ata in remarks or on separa Non-Vascular Plants	
			Problematic	Hydrophytic Vegetation (Ex	φlain)
Woody Vine Stratum Plot size (3	0 Foot Radius)			and wetland hydrology musbed or problematic for #3, 4	
Percent Bare Ground 40			Hydrophytic Vegeta Present?	Yes V NO	
Remarks:			•		
BG/liter=40%					

US Army Corps of Engineers Great Plains - Version 2.0

SOIL Sampling Point: DP01w

Profile Des	cription: (Describe	to the dept	needed	to docur	nent the i	ndicato	r or confi	irm the absence of indicators.)
Depth	Matrix		0-1		x Features		1 2	- Tanking Daniel
(inches)	Color (moist)	%	Color (%	_Type ²		
0-13	2.5Y 4/2	85	N	3/0	5_	_D_	M	Silty Clay
0-13			10YR	3/4	10	С	M	Silty Clay
							_	
1			D . 1	Maria 65				2
	oncentration, D=Dep Indicators: (Application)						ited Sand	Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histoso		unie IU ali L	ə, uíl	_			١	
	pipedon (A2)		_		Gleyed Ma Redox (S5)	☐ 1 cm Muck (A9) (LRR I, J)☐ Coast Prairie Redox (A16) (LRR F, G, H)
	istic (A3)		T	= -	d Matrix (S			Dark Surface (S7) (LRR G)
	en Sulfide (A4)		Ī		Mucky Min		1)	High Plains Depressions (F16)
	d Layers (A5) (LRR F	-)	Ī	_	Gleyed Ma			(LRR H outside of MLRA 72 & 73)
1 cm Mi	uck (A9) (LRR F, G, I	H)	V	Deplete	d Matrix (F	- 3)		Reduced Vertic (F18)
	d Below Dark Surface	e (A11)		=	Dark Surfa	, ,		Red Parent Material (TF2)
_	ark Surface (A12)		Ļ	= '	d Dark Su		7)	☐ Very Shallow Dark Surface (TF12)
	Mucky Mineral (S1)	CO) /I DD C		=	Depression		(E46)	Other (Explain in Remarks)
	Mucky Peat or Peat (ucky Peat or Peat (S3	, ,	, H) <u> </u>		ains Depre RA 72 & 7			³ Indicators of hydrophytic vegetation and wetland hydrology must be present,
S CITI IVII	ucky real of real (53) (LKK F)		(IVIL	IVM 12 0x 1	J UI LF	xix r1)	unless disturbed or problematic.
Restrictive	Layer (if present):							anissa distance of problematic.
Type:								
Depth (in								Hydric Soil Present? Yes ✓ No □
		ndicated h	v a chro	ma of 1 a	and value	of 5 a	ccompan	nied by distinct redoximorphic depletions and
	oncentrations com				ana value	, oi o a	Compan	ned by distinct redoximorphile depletions and
HYDROLO)GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of o	<u>ne required</u>	check al	I that appl	y)			Secondary Indicators (minimum of two required)
Surface	Water (A1)		:	Salt Crust	(B11)			✓ Surface Soil Cracks (B6)
High Wa	ater Table (A2)			Aquatic Inv	vertebrate:	s (B13)		Sparsely Vegetated Concave Surface (B8)
Saturati	on (A3)			Hydrogen	Sulfide Od	dor (C1)		✓ Drainage Patterns (B10)
Water N	larks (B1)			Dry-Seaso	n Water T	able (C	2)	Oxidized Rhizospheres on Living Roots (C3)
Sedime	nt Deposits (B2)			Oxidized F	Rhizosphei	res on L	iving Root.	ts (C3) (where tilled)
Drift De	posits (B3)			(where r	not tilled)			Crayfish Burrows (C8)
Algal Ma	at or Crust (B4)			Presence	of Reduce	d Iron (C4)	Saturation Visible on Aerial Imagery (C9)
	oosits (B5)			Thin Muck				✓ Geomorphic Position (D2)
	ion Visible on Aerial I	magery (B7) 🔲 (Other (Exp	olain in Re	marks)		✓ FAC-Neutral Test (D5)
✓ Water-S	Stained Leaves (B9)							Frost-Heave Hummocks (D7) (LRR F)
Field Obser								
Surface Wat	ter Present? Y	es <u> </u>						
Water Table	Present? Y	es 🔲 N	lo	Depth (in	ches):			
Saturation P		es N	o 	Depth (in	ches):		We	etland Hydrology Present? Yes No
	pillary fringe) corded Data (stream	gauge moi	nitorina w	ell aerial i	ohotos pre	evious i		
South Ne	Soluca Data (Stream	gaage, moi	o.mig w	on, aonai j	o.o., pre	. v 1043 1		oj, ii atanabio.
Remarks:	-11		- al I - :	l	- d - t ''	:4		
Nemains. S	oil very moist and v	vater stain	ed leave	s observ	ed at soil	pit.		

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name Forsyth NW - Middle		2. MDT project#	ST	PP STWD (756	6)	Control#	9680000
3. Evaluation Date 7/8/2020 4. Evaluators	R Jone	es 5	Wetl	and/Site# (s)	Forsyth I	NW - Middle	
6. Wetland Location(s): T 7 N R	39 E	Sec1 33	- т	7 N R	39 E	Sec2 34	
Approx Stationing or Mileposts ~262 on US 12							
Watershed 4 - Middle Yellowstone W	atersh	ed/County Rosel	oud				
7. Evaluating Agency CCI for MDT				8. Wetland s	size acres	,	0.58
Purpose of Evaluation				How assess	ed:	Measured e.g.	by GPS
$\hfill \Box$ Wetlands potentially affected by MDT project				9. Assesssn			0.58
☐ Mitigation Wetlands: pre-construction				(AA) size (ac	•	Measured e.g.	hy GPS
✓ Mitigation Wetlands: post construction				110W 033633	ou.	weasured e.g.	by Oi O
Other							
10. Classification of Wetland and Aquatic Habitat	s in AA						
HGM Class (Brinson) Class (Cowardin)		Modifier (Coward	lin)	Water Re	gime	% of <i>i</i>	AA
Depressional Emergent Wetland		Excavated		Seasonal/Int	ermittent		100
		- [
44 Estimated Polative Abundance Abundan							
11. Estimated Relative Abundance Abundan 12. General Condition of AA	L						
i. Disturbance: (use matrix below to determine [circle] aquatic nuisance vegetation species (ANVS) lists)	appropri	ate response – see in	structio	ns for Montana-li	sted noxiou	us weed and	
aquatic fluisance vegetation species (ANVS) lists)		Pred	ominant	conditions adjacent	to (within 50	0 feet of) AA	
	natura	ged in predominantly al state; is not grazed,	mod	d not cultivated, but erately grazed or ha	yed or		t to substantial fill
Conditions within AA	conve	, logged, or otherwise rted; does not contain	subj	ctively logged; or ha ect to minor clearing	j; contains		ation; high road or
		or buildings; and noxious or ANVS cover is <=15%.		roads or buildings; r d or ANVS cover is		building density; or ANVS cover is	
AA occurs and is managed in predominantly natural state; is not			+				
grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is	lo	w disturbance		low disturba	nce	moderate of	disturbance
<=15%. 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;		moderate disturbance	m	oderate distu	rbance	high dis	turbance
noxious weed or ANVS cover is <=30%. AA cultivated or heavily grazed or logged; subject to relatively	-	disturbance	ľ			-	
substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is	hig	gh disturbance		high disturba	ince	high dis	turbance
>=30%.	-		-			-	
Comments: (types of disturbance, intensity, seaso AA has become well vegetated	n, etc)						
II Descriptions and a second s	· · · · · ·	· ·					
ii. Prominent noxious, aquatic nuisance, other exo No Tamarix was observed on site. Canada thistle and			ised ai	nd Euphorbia e	sula obse	rved in 2020.	
iii. Provide brief descriptive summary of AA and se	urround	ling land use/habit	at				
AA very similar to Forsyth NW - East, only smaller. AA includes agriculture (grazing) and highway.	include	es a linear, excavate	d road	Iside depressio	n parallel	to US 12. Surro	unding land

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 Rating 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 1 class, but not a monoculture М YES> L <NO 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA L Comments: 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 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)

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

doc/secondary

.8H

sus/secondary

.7M

doc/incidental

.3L

sus/incidental

.1L

None

0L

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

Highest Habitat Level

Functional Points and

Rating

Sources for documented use

doc/primary

1H

USFWS T&E list for Rosebud County

sus/primary

.9H

Primary or critical habitat (list species)	● D ○ S	Scarlet Ammannia - Ammannia robusta (S2)
Secondary habitat (list Species)	□ D □ S	
Incidental habitat (list species)	○ D • S	Great Blue Heron (S3)
No usable habitat	S S	

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

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

Sources for	MTNHP SOC report for T7N R39E reported an Ammannia observation in 2013.
documented use	

																			Low			
bstantial (base	d on any	of the	followin	g [che	eck]):						Mini	<i>mal</i> (b	ased or	n any of	the foll	owing	[check]):				
observations	of abun	dant wil	dlife #s	or hig	h specie	es dive	rsity (du	ring ar	y period	d)	✓ fe	ew or n	o wildlif	e obsei	vations	during	g peak ι	ıse peri	ods			
abundant wild	dlife sign	such a	ıs scat,	tracks	, nest s	tructure	s, game	trails.	etc.		√ li	ttle to r	o wildli	fe sign								
presence of e	extremel	y limitin	g habita	at feat	ures not	availal	ole in the	e surro	ounding	area	s	parse a	adjacen	t upland	d food s	ources	3					
interviews wit	h local b	oiologist	ts with k	nowle	dge of t	he AA					ir	nterviev	vs with	local bi	ologists	with k	nowled	ge of th	e AA			
oderate (based	on any c	of the fo	llowing	[check	k]):																	
observations	of scatte	ered wil	dlife gro	oups o	r individ	uals or	relative	ly few	species	during	peak p	eriods										
common occ	urrence	of wildli	fe sign s	such a	is scat,	tracks,	nest str	ucture	s, game	e trails, e	etc.											
adequate adj	acent up	land fo	od sour	ces																		
interviews wit	th local b	oiologist	ts with k	nowle	dge of t	he AA																
rom #13. For other in terms oermanent/per erms]) otructural	of their	perce	nt com	posit	ion of t	he ÅA	(see #	ŧ10).	Abbrev	viations	s for s	urface	water	durati	ons ar	e as f	ollows	P/P =	:			
liversity (see 113)				Hi	gh							Mode	erate					Lo	w			
Class cover listribution (all regetated classes)		Eve	∍n			Une	ven			Eve	en			Une	ven			Ev	en			
Ouration of surface water in ≥	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	P/P	S/I	T/E	А		
ow disturbance t AA (see #12i)	Е	Е	E	н	Е	Е	Н	н	Е	н	Н	М	Е	Н	М	М	Е	Н	М	м		
Moderate listurbance at AA see #12i)	н	Н	Н	Н	Н	Н	Н	М	Н	Н	М	М	Н	М	М	L	Н	М	L	L		
ligh disturbance t AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L		
				·				-														
ii. Rating (use th	e con	clusio	ns fr	om ia	nd ii a	above	and t	the ma	atrix b	elow 1	to arri	ve at	[chec	k] the	func	tional	points	and	rating)	
Evidence of v	vil dlife	use ((i)							V	Vildlife	e habi	tat fea	atures	rating	g (ii)						
				E	Excep	tional				High	1				Mo	derat	е				Low	
Substantial					1E					.91	н [.8H					.7M	
Moderate					.9H					.71	М					5M					.3L	
viouerate					.6N	1		Г		.4	М					.2L					.1L	
Winimal				_																		

■ NA here and proceed to 14E.)

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

Duration of surface water in AA		Pei	manent / I	Perennial				Se	easonal /	Intermitten	t			Tem	porary/	Epheme	eral	
Aquatic hiding / resting / escape cover	Opt	timal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Aded	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	.7М	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying field an instantially f	ound in A	A .								
Sources used for identifying fish sp. potentially f										
ii. Modified Rating (NOTE: Modified score ca a) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need o fishery or aquatic life support, or do aquatic nuis yes, reduce score in i above by 0.1: Modified	a culvert, f TMDL de ance plan	dike, or othe evelopment v	r man-made : with listed "Pr	structure or obable Imp	aired Ü	ses" includir	ng cold or w	varm water	ne If	
b) Does the AA contain a documented spawning comments) for native fish or introduced game fis		other critical l			he adju	sted score in				
iii. Final Score and Rating: 0 NA	Comm	ents: Not a	ipplicable.			9				
14E. Flood Attenuation: (Applies only to wetl	anda auhi	act to floodin	ng via in aban	nol or over	ank fla	w If wotlon	do in AA or	o not floods	nd from in	
channel or overbank flow, click NA her	e and pro	ceed to 14F.)	ner or overs	Jank 110	w. II wellali	us III AA ai	e not noode	a nom m-	
i. Rating (working from top to bottom, use the Estimated or Calculated Entrenchment (Rosge		low to arrive				and rating) enched – B	Entrenc	hed-A, F, G	stream	
1994, 1996)	Oligit	stream ty			tream t		Littlefic	types	Stream	
% of flooded wetland classified as forested and/or scrub/shrub	75%	6 25-75°	% <25%	75%	25-75	5% <25%	75%	25-75%	<25%	
AA contains no outlet or restricted outlet	_1⊦	.9H	.6M	.8H	.7N	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.91	.8H	.5M	.7M	.6N	.4M	.3L	.2L	.1L	
Slightly Entrenched		Moderate	ely Entrenched	·		E	Entrenched			7
ER = >2.2 C stream type D stream type E stream	n type		1.41 - 2.2 ream type	Α:	stream ty	-	R = 1.0 - 1.4 F stream type		stream type	_
	:=/				~					
2 x Bankfull D	1	Bankfull	Depth	4414	В	Flood-pro	lth			
width	wic					ratio	chment		-4-4	
ii. Are ≥10 acres of wetland in the AA subject to within 0.5 mile downstream of the AA (check)?	Y	N •	m-made leatt	ires which i	nay be	signilicantly	uamageu i	by iloous loc	aleu	
AA not subject to flooding										
14F. Short and Long Term Surface Wa upland surface flow, or groundwater flow. 14G.)	terStor	age: (Applionage) Additional (Applionage)	es to wetlan ne AA are su	ds that flo bject to flo	od or pooding	oond from c or ponding	overbank o , dick [or in-chanr NA here	el flow, pre and proce	ecipitation, eed to
i. Rating (Working from top to bottom, u water durations are as follows: P/P = perr 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 fee	et		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	.81	1	.6M	.5M	.4M	.3L	.2L
Walland in Add and a second of the second of	.9H	.8H	.7M	.71	И	.5M	.4M	.3L	.2L	.1L

Comments: AA subject to ponding from snowmelt, precipitation and overland flow from adjacent roads and uplands.

low]) ediment, nutrient, and toxica	ant input					Waterbod	y on MDEQ list of wa	aterbodies in n	eed of TMDL
evels within AA	,	to de compour not sub	eliver levels nds at levels estantially im ces of nutrie	of sediments s such that ot paired. Mino	use with potential, nutrients, or her functions are r sedimentation, its, or signs of ent.	developr nutrients, or with potenti compounds s	nent for "probable ca toxicants or AA rec al to deliver high leve such that other functi entation, sources of of eutrophicati	auses" related t eives or surrou els of sedimen ions are substa nutrients or tox	osediment, Inding land us ts, nutrients, c antially impair
cover of wetland vegetation vidence of flooding / ponding			70%		< 70%		≥ 70%	<	70%
A contains no or restricted	outlet	Yes 1H	.8H	Yes .7M	.5M	Yes .5M	.4M	Yes .3L	.2L
A contains unrestricted ou	tl et	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L
omments: AA less th	700/			.0101	.4101	.4101	.UL	.ZL	.15
H Sediment/Shoreline Sininge, or on the shoreline		\	,						
ceed to 14l.) Rating (working from top	to bottom, ı		•	o arrive at [cl	neck] the function	al points and rati	ng)	anu	
Cover of <u>wetland</u> streambank preline by species with stability		Permane	ent / Perennia		urface water adjace Seasonal / Interm		Temporary / Ephemo	eral	
>6 (see Annendix F)									
			1H		.9H		.7M		
5%			1H .7M		.9H		.7M		
65% -64% 35% Not applic	able.								
Not application Export/ i. Level of Biological Ac	Food Chain	nesis of wild	.7M .3L		.6M .2L		.5M		
Not application Export/	Food Chain	nesis of wild	.7M .3L	n habitat ratii t Rating (14	.6M .2L		.5M		
Not application Mot ap	Food Chain tivity (synth Ge	nesis of wild	.7M .3L dlife and fish		.6M .2L		.5M		
Mot applications Mot applicat	Food Chain stivity (synth Ge E/H	nesis of wild	.7M .3L dlife and fish		.6M .2L ngs [check]) C.iii.)		.5M		
Mot application Export/ i. Level of Biological Action General Fish Habitat Rating (14D.iii.) E/H	Food Chain Etivity (synth Ge E/H	nesis of wild	.7M .3L dlife and fish		ngs [check]) C.iii.) L		.5M		
Mot application Export/ i. Level of Biological AcGeneral Fish Habitat Rating (14D.iii.) E/H M	Food Chain etivity (synth Ge E/H H	nesis of wild	.7M .3L dlife and fish		.6M .2L ngs [check]) C.iii.) L M M		.5M		
Not applications applications and applications applicatio	Food Chain tivity (synth Ge E/H H M H p to bottom, A; Factor B: irree rows pe	use the m	.7M .3L	to arrive at [tivity rating fiface water in	ngs [check]) C.iii.) L M L L Check] the function above (141.i.)	; Factor C = whe P/P, S/I, and T/E	.5M .1L ting. Factor A = ac ther or not the AA care as previously do	ontains a surf	ace or
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i. Discharge Ind										
	icators				ii.	Recharge I	ndicators			
The AA is a slope we				Perm		ate present wi		ing impeding	layer	
Springs or seeps are	known or obse	erved				inlet but no ou		0 1 0	•	
Vegetation growing d	uring dormant	season/dro	ught	Strea	m is a known	ı 'los ing' strea	m; discharge	volume decr	eases	
Wetland occurs at the	e toe of a natui	ral slope		Othe	r:					
Seeps are presentat	the wetland ed	dge								
AA permanently flood	led during drou	ught periods	;							
Wetland contains an										
Shallow water table a	ind the site is s	saturated to	the surface							
Other:										
iii. Rating (use the inform	nation from i a	nd ii above	and the table	below to arri	ve at [check]	the functiona	al points and	rating)		
<u> </u>			Duration of sat	uration at AA	Wetlands FRO	OM GROUNDN	ATER DISCH	ARGE OR WIT	TH WATER	
				THAT IS	RECHARGING	THE GROUN	DWATER SYS	<u>STEM</u>		
Criteria			P/P		S/I		T None		ne	
Groundwater Discharge or Re	echarge		1H		.7M		.4M	.1	L	
Insufficient Data/Information						NA				
omments: AA w/out p	oermeable su	ubstrate, h	olds surface	water even	tually lost to	o evaporatio	n.			
,		,			,	'				
I4K. Uniqueness: . Rating (working from to	on to hottom .	ise the mat	riv helow to ar	rive at Ichec	k1 the functio	nal points an	d ratina)			
. Kating (Working norm to	p to bottom, t	ise the mat	IIX DEIOW IO AI		not contain		a raurig)			
	AA contains	fen, bog, v	varm springs		e types and		AA does	not contain p	oreviously	
Replacement potential		(>80 yr-old	•	diversity (#13) is high or conta			ontains cited rare t			
		plant associ 1" by the M	iation listed	plant asso	ciation listed the MTNHP	-	and stru	ctural diversit low-moderate		
stimated relative	rare	commo	abundant	rare	common	abundant	rare	common	abundant	
abundance (#11)		n								
_ow disturbance at AA	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L	
				1411						
,					4	1	4	1		
Moderate disturbance at	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L	
Moderate disturbance at AA (#12i) High disturbance at AA										
Moderate disturbance at AA (#12i) High disturbance at AA	.9H	.8H .7H	.7M	.7M .6M	.5M	.4M	.4M	.3L	.2L .1L	
Moderate disturbance at AA (#12i) High disturbance at AA (#12i)	.8Н	.7H	.6M							
Moderate disturbance at AA (#12i) High disturbance at AA #12i)		.7H	.6M							
Moderate disturbance at AA (#12i) High disturbance at AA (#12i)	.8Н	.7H	.6M							
Moderate disturbance at AA (#12i) High disturbance at AA #12i) comments: Habitat wit	.8H thin AA typic	.7H	.6M	.6M	.4M	.3L	.3L			
Moderate disturbance at AA (#12i) High disturbance at AA (#12i) comments: Habitat with	.8H thin AA typic	.7H al of roads	.6M side ditch.	.6M	.4M	.3L	.3L	.2L	.1L	
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FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Forsyth NW - Middle

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	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	Н	.9	1	0.52	✓
C. General Wildlife Habitat	М	.4	1	0.23	✓
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	L	.3	1	0.17	✓
G. Sediment/Nutrient/Toxicant Removal	М	.7	1	0.41	✓
H. Sediment/Shoreline Stabilization	NA	0	0	0.00	
Production Export/Food Chain Support	L	.3	1	0.17	
J. Groundwater Discharge/Recharge	NA	0	0	0.00	
K. Uniqueness	L	.2	1	0.12	
L. Recreation/Education Potential (bonus points)	L	.05	NA	0.03	
Totals:		2.85	7	1.65	
Percent of Possible Score			40.71 %		

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

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

I II III IV

Forsyth NW - Middle Wetland Mitigation Site - 2013 - 2020 Vegetation Species List

Scientific Names	Common Names	GP Indicator Status ^(a)
Alisma triviale	Northern Water-Plantain	OBL
Alopecurus pratensis	Field Meadow-Foxtail	FACW
Ambrosia psilostachya	Perennial Ragweed	FACU
Ammannia robusta	Grand Redstem	OBL
Avena fatua	Wild Oats	UPL
Bassia scoparia	Mexican-Fireweed	FACU
Bromus arvensis	Japanese Brome	UPL
Bromus carinatus	California Brome	UPL
Bromus inermis	Smooth Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Chenopodium album	Lamb's-Quarters	FACU
Cirsium arvense	Canadian Thistle	FACU
Convolvulus arvensis	Field Bindweed	UPL
Deschampsia caespitosa	Tufted Hair Grass	FACW
Deschampsia elongata	Slender Hair Grass	FAC
Echinochloa crus-galli	Large Barnyard Grass	FAC
Eleocharis palustris	Common Spike-Rush	OBL
Elymus canadensis	Nodding Wild Rye	FACU
Elymus elymoides	Western-Bottlebrush grass	FACU
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Euphorbia esula	Leafy Spurge	UPL
Filago arvensis	Field Fluffweed	UPL
Glyceria grandis	American Manna Grass	OBL
Grindelia squarrosa	Curly-Cup Gumweed	UPL
Helianthus annuus	Common Sunflower	FACU
Hordeum jubatum	Fox-Tail Barley	FACW
Lactuca serriola	Prickly Lettuce	FAC
Lepidium perfoliatum	Clasping Pepperwort	FAC
Linum lewisii	Prairie Flax	UPL
Melilotus officinalis	Yellow Sweet-Clover	FACU
Muhlenbergia asperifolia	Alkali Muhly	FAC
Nassella viridula	Green Needlegrass	UPL
Panicum capillare	Common Panic Grass	FAC
Pascopyrum smithii	Western-Wheat Grass	FACU
Poa compressa	Flat-Stem Blue Grass	FACU
Poa palustris	Fowl Blue Grass	FACW
Poa pratensis	Kentucky Blue Grass	FACU
Polygonum aviculare	Yard Knotweed	FACU
Populus deltoides	Eastern Cottonwood	FAC
Puccinellia nuttalliana	Nuttall's Alkali Grass	OBL
Ratibida columnifera	Prairie Coneflower	UPL
Rosa arkansana	Prairie Rose	FACU
Rumex acetosella	Common Sheep Sorrel	FAC
Rumex crispus	Curly Dock	FAC

Forsyth NW - Middle Wetland Mitigation Site - 2013 - 2020 Vegetation Species List

Scientific Names	Common Names	GP Indicator Status ^(a)
Salix amygdaloides	Peach-Leaf Willow	FACW
Salix exigua	Narrow-Leaf Willow	FACW
Salix fragilis	Fragile Willow	FAC
Salix lutea	Yellow Willow	FACW
Sarcobatus vermiculatus	Greasewood	FAC
Schedonorus pratensis	Meadow False Rye Grass	FACU
Schoenoplectus maritimus	Saltmarsh Club-Rush	OBL
Setaria pumila	Yellow Bristle Grass	FACU
Solanum rostratum	Buffalo Bur	UPL
Symphoricarpos albus	Common Snowberry	UPL
Tamarix chinensis	Salt-cedar	UPL
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Xanthium strumarium	Rough Cockleburr	FAC

⁽a) 2018 National Wetland Plant List (USACE 2018)

New species identified in 2020 are **bolded**.

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Forsyth NW - East	Assessment Date/Time	<u>7/8/2</u> 020
Person(s) conducting the assessment: <u>F</u>	R. Jones	
Weather: <u>sunny, 85 degrees F</u>	Location: ~8 miles NW of Forsyth	
MDT District: Glendive	Milepost: ~262.3 on US 12	<u> </u>
Legal Description: T <u>7N</u> R <u>39E</u> Sect	ion(s) <u>34</u>	
Initial Evaluation Date: 8/15/2013	Monitoring Year: <u>8</u> #Visits in Year: <u>1</u>	
Size of Evaluation Area: 2.74 (acres	<u>s)</u>	
Land use surrounding wetland: Agriculture and US Highway 12.		
	HYDROLOGY	
Surface Water Source: Precipitation, runo	ff	
Inundation: Average Depth	: <u>0 (ft)</u> Range of Depths: <u>0</u>	<u>(ft)</u>
Percent of assessment area under inundatio	n:0 <u>%</u>	
Depth at emergent vegetation-open water bo	oundary:0 (ft)	
	the soils saturated within 12 inches of surface:	No
	— – drift lines, erosion, stained vegetation, etc <u>:</u>	
	dried algal mats, oxidized rhizospheres on livin	g roots
Groundwater Monitoring Wells		
Record depth of water surface below gro	ound surface, in feet.	
Additional Activities Checklist:		
Map emergent vegetation-open water boundary or	n aerial photograph.	
Observe extent of surface water during each site v	risit and look for evidence of past surface water	
elevations (drift lines, erosion, vegetation staining, etc.)		
Use GPS to survey groundwater monitoring well logydrology Notes:	ocations, if present.	
Tydrology Notes.		
Site dry on day of investigation.		

VEGETATION COMMUNITIES

Site Forsyth NW - East

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

1

Community # 3	Community Type:	Pascopyrum smithii / Elymus sp.	Acres:	<u>0.6</u>
Species	Cover class	Species	Cover class	
Agropyron cristatum	1	Alopecurus arundinaceus	1	
Ambrosia psilostachya	1	Bare Ground	1	
Bromus arvensis	1	Bromus tectorum	1	
Chenopodium album	1	Convolvulus arvensis	0	
Elymus canadensis	1	Elymus repens	1	
Elymus trachycaulus	3	Euphorbia esula	1	
Grindelia squarrosa	1	Hordeum jubatum	1	
Lactuca serriola	1	Linum lewisii	1	
Melilotus officinalis	1	Pascopyrum smithii	5	

Comments:

Poa compressa

Tragopogon dubius

Community # 4 Community Type: Hordeum jubatum / Eleocharis palustris Acres: 2.14

Rumex crispus

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Alopecurus pratensis	2
Bare Ground	1	Convolvulus arvensis	1
Eleocharis palustris	4	Elymus repens	1
Hordeum jubatum	2	Pascopyrum smithii	2
Poa compressa	1	Poa pratensis	1
Populus deltoides	1	Rumex crispus	0
Salix fragilis	1	Schedonorus pratensis	1
Schoenoplectus maritimus	2	Spartina pectinata	2
Comments:			

Increased woody vegetation over previous years.

Total Vegetation Community Acreage

2.74

1

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

VEGETATION TRANSECTS

Transect Number: 1		Compass	145	
Interval Data: Ending Station	32 6	Same man unifor Trops	. Passanyrum emithii / Elym	nue en
Species		Community Type	Pascopyrum smithii / Elym	Cover class
Bromus tectorum		0	Euphorbia esula	0
Lactuca serriola		0	Melilotus officinalis	0
Pascopyrum smithii		5	Tragopogon dubius	0
Ending Station	97 (Community Type	Hordeum jubatum / Eleoc	haris palustris
Species	(Cover class	Species	Cover class
Alopecurus arundinaceus		4	Bare Ground	2
Eleocharis palustris		3	Elymus repens	2
Hordeum jubatum		1	Rumex crispus	0
Schoenoplectus maritimus		0		
Ending Station	125 (Community Type	Pascopyrum smithii / Elym	nus sp.
Species	(Cover class	Species	Cover class
Alopecurus arundinaceus		1	Bromus tectorum	2
Chenopodium album		1	Convolvulus arvensis	1
Elymus trachycaulus		1	Lactuca serriola	1
Melilotus officinalis		0	Pascopyrum smithii	3
Poa compressa		2		

Transect Number: 2 Compass Direction from Start: 280								
Interval Data:								
Ending Station	17	Community Type:	Pascopyrum smithii / Elymu	ıs sp.				
Species		Cover class	Species	Cover class				
Bare Ground		4	Grindelia squarrosa	1				
Hordeum jubatum		1	Pascopyrum smithii	5				
Poa compressa		1						
Ending Station	130	Community Type:	Hordeum jubatum / Eleoch	aris palustris				
Species		Cover class	Species	Cover class				
Alopecurus arundinaceus		1	Bare Ground	2				
Convolvulus arvensis		1	Eleocharis palustris	4				
Hordeum jubatum		5	Pascopyrum smithii	1				
Poa compressa		1	Rumex crispus	2				
Salix fragilis		2	Schedonorus pratensis	2				
Ending Station	181	Community Type:	Pascopyrum smithii / Elymu	ıs sp.				
Species		Cover class	Species	Cover class				
Bare Ground		3	Pascopyrum smithii	5				
Rumex crispus		1						
Transect Notes:								
Wetland community h	nas ir	ncreased 13 feet in l	ength.					

PLANTED WOODY VEGETATION SURVIVAL

Forsyth NW - East

Comments

No planted woody vegetation.

Forsyth NW - East

WILDLIFE

Biras	
Were man-made nesting structures installed?	No_
If yes, type of structure:	
How many?	
Are the nesting structures being used?	No
Do the nesting structures need repairs?	No
Nesting Structure Comments:	

Species	#Observed	Behavior	Habitat
Meadowlark	1	FO	
Tree Swallow	2	FO	
Bird Comments			

BEHAVIOR CODES

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

HABITAT CODES

 ${f AB}$ = Aquatic bed ${f SS}$ = Scrub/Shrub ${f FO}$ = Forested ${f UP}$ = Upland buffer ${f I}$ = Island

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

Mammals and Herptiles	
Vildlife Comments:	

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:

V	l One p	hotograp	h for eacl	n of the fo	our cardinal	directions	surrounding t	he wetland.	

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

At least one photograph showing the buffer surrounding the wetland.

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

Photo #	Latitude	Longitude	Bearing	Description	
DP-1U	46.320867	-106.838654			
DP-1W	46.320938	-106.838569			
DP-2U	46.318365	-106.834547			
DP-2W	46.318419	-106.834443			
PP-1	46.321003	-106.838814	125	Photo Point 1	
PP-2	46.320068	-106.837128	210	Photo Point 2	
PP-3	46.318233	-106.834335	305	Photo Point 3	
T-1 end	46.320297	-106.838493	325	Transect 1 end	
T-1 start	46.321045	-106.838486	145	Transect 1 start	
T-2 end	46.318417	-106.834923	100	Transect 2 end	
T-2 start	46.318336	-106.834175	280	Transect 2 start	

Comments:

ADDITIONAL ITEMS CHECKLIST

	Hydrology
□ ☑ Iines,	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 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
✓ Ma	ap vegetation community boundaries
✓ Co	mplete Vegetation Transects
	Soils
✓ As	sess soils
	Wetland Delineations
✓ Suppl	Delineate wetlands according to applicable USACE protocol (1987 form or ement)
	Delineate wetland – upland boundary onto aerial photograph.
Wetla	nd Delineation Comments
We	tland boundary evaluated and determiend in field, not from photos.
	Functional Assessments
⊻ forms	Complete and attach full MDT Montana Wetland Assessment Method field .
Funct	ional Assessment Comments:
Cat	egory 3 wetland.

Maintenance

Were man-made nesting structure installed at this site?
If yes, do they need to be repaired?
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.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW East	City/County: Rosebud	Sampling Date:7/8/2020
		State: Montana Sampling Point: DP01u
Investigator(s): R. Jones		
Landform (hillslope, terrace, etc.): Hillside		
		Long:106.838654 Datum: NAD 83
Soil Map Unit Name: 98: Harlem silty clay, 0-2 percent slopes, or		
Are climatic / hydrologic conditions on the site typical for this time of ye		
Are Vegetation, Soil, or Hydrology significantly		
Are Vegetation, Soil, or Hydrology naturally pr	oblomatic? (If noc	aded explain any answers in Remarks)
SUMMARY OF FINDINGS – Attach site map showing		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Upland sample point located on hillslope, adjacent t	Is the Sampled A	· ·
VEGETATION - Use scientific names of plants		
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute Domian Species	t Indicator	Dominance Test worksheet
Gover: Species	s? Status	Number of Dominant Species that are OBL, FACW or FAC: 0 (A)
		Total Number of Dominant Species Across All Strata:
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)
		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species X 1 FACW species X 2
		FAC species X3
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species X 4
Elymus trachycaulus 7	FACU	UPL species 30 X 5 150
Lactuca serriola 1	FAC	Column Totals (A) (B)
Pascopyrum smithii 20 🔽	FACU	Prevalence Index = B/A =
Tragopogon dubius 2	UPL	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
Woody Vine Stratum Plot size (30 Foot Radius)		☐ Problematic Hydrophytic Vegetation (Explain)
Tiot 3/25 (50 Toot radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 70		Hydrophytic Vegetation Yes □ NO ✓
Remarks:		
BG/litter=70%		

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SOIL Sampling Point: DP01u

Depth	Matr		Redox Features		
(inches)	Color (mois	t) %	Color (moist) % Type ¹	Loc ² Text	ure Remarks
0-06	2.5Y 4/3			Sandy Cl	ay
06-14	2.5Y 5/2	100		Silty Cla	у
1 _{Typo: C=C}	`oncontration D	Donlotion PM-P	educed Matrix, CS=Covered or Coate	d Sand Grains	2 ocation: DI - Para Lining M-Matrix
			RRs, unless otherwise noted.)		² Location: PL=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Black H Hydrog Stratifie 1 cm M Deplete Thick D Sandy I 2.5 cm 5 cm M	Epipedon (A2) distic (A3) en Sulfide (A4) ed Layers (A5) (Li uck (A9) (LRR F, ed Below Dark Sulark Surface (A12) Mucky Mineral (Si Mucky Peat or Pea	G, H) urface (A11) 2) 11) eat (S2) (LRR G, Int (S3) (LRR F)	Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) High Plains Depressions (FR) (MLRA 72 & 73 of LRR		I cm Muck (A9) (LRR I, J) Coast Prairie Redox (A16) (LRR F, G, H) Dark Surface (S7) (LRR G) High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) Reduced Vertic (F18) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) cators of hydrophytic vegetation and vetland hydrology must be present, unless disturbed or problematic.
Restrictive	Layer (if presen	it):			
Type:			<u> </u>		
Depth (in	nches):		<u> </u>	Hydri	c Soil Present? Yes No
HYDROLO	OGY				
Wetland Hy	/drology Indicat	ors:			
-			check all that apply)	Se	condary Indicators (minimum of two required
	· Water (A1)	•	Salt Crust (B11)		Surface Soil Cracks (B6)
	ater Table (A2)		Aquatic Invertebrates (B13)		Sparsely Vegetated Concave Surface (B8)
	ion (A3)		Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)
_	Marks (B1)		Dry-Season Water Table (C2)		Oxidized Rhizospheres on Living Roots (C
_	ent Deposits (B2)		Oxidized Rhizospheres on Livi	na Roots (C3)	(where tilled)
	posits (B3)		(where not tilled)	g()	Crayfish Burrows (C8)
_	at or Crust (B4)		Presence of Reduced Iron (C4	,	_ Saturation Visible on Aerial Imagery (C9)
= -	posits (B5)		Thin Muck Surface (C7)	,	Geomorphic Position (D2)
	ion Visible on Ae	rial Imagery (B7)	Other (Explain in Remarks)		FAC-Neutral Test (D5)
	Stained Leaves (outer (Explain in Remarke)		Frost-Heave Hummocks (D7) (LRR F)
Field Obser	`			_	
	ter Present?	Yes No	Depth (inches):		
Water Table Saturation F (includes ca			Depth (inches): Depth (inches):		rology Present? Yes No
		eam gauge, monit	toring well, aerial photos, previous ins	pections), if availab	ole:
Remarks: N	o evidence of v	vetland hydrolog	gy observed.		
Remarks: N	o evidence of v	vetland hydrolog	gy observed.		

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW East	City/County: Rosebud	Sampling D	ate: 7/8/2020
		State: Montana Sampling Po	
Investigator(s): R. Jones			
Landform (hillslope, terrace, etc.): Swale			
Subregion (LRR): LRR G Lat:			
Soil Map Unit Name: 98: Harlem silty clay, 0-2 percent slopes, o			
Are climatic / hydrologic conditions on the site typical for this time of y			
Are Vegetation, Soil, or Hydrology significantl	y disturbed? Are "N	lormal Circumstances" present? Yes	s No L
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If nee	eded, explain any answers in Remark	s.)
SUMMARY OF FINDINGS - Attach site map showin	g sampling point lo	cations, transects, importar	nt features, etc.
Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No Wetland Hydrology Present? Yes ✓ No	is the Sampleu /	Area d? Yes <u>✔</u> No _]
Remarks: PEM, DEPRESSIONAL wetland.	·		
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domial % Cover: Specie	nt Indicator s? Status	Dominance Test worksheet	
		Number of Dominant Species that are OBL, FACW or FAC:	1 (A)
		Total Number of Dominant Species Across All Strata:	1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 % (A/B)
Supringion and Stratam Processes (10 Took Radias)		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 20 X 1 FACW species 6 X 2	20
		FAC species 1 X 3	3
		FACU species 0 X4	0
Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus arundinaceus 5	FACW	UPL species 2 X 5	10
Eleocharis palustris 20	OBL	Column Totals 29 (A)	45 (B)
Hordeum jubatum 1	FACW		1.55
Lactuca serriola 2	FAC	Prevalence Index = B/A =	
Rumex crispus 1	FAC	Hydrophytic Vegetation Indicator 1 - Rapid Test for Hydrophy	
		✓ 2 - Dominance Test is >509	
		✓ 3 - Prevalence Index is <= 3	3.0
		 4 - Morphological Adaptatic supporting data in remarks sheet. 	
		5 - Wetland Non-Vascular F	Plants
Woody Vine Stratum Plot size (30 Foot Radius)		☐ Problematic Hydrophytic Ve	egetation (Explain)
Thorage (50 Feet hadae)		Indicators of hydric sil and wetland h present, unless disturbed or problem	
Percent Bare Ground 71		Hydrophytic Vegetation Yes	✓ NO □
Remarks:			
BG/litter=71%			

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SOIL Sampling Point: DP01w

Content Color (moist) Size Color (moist) March Size	Profile Desc	ription:	(Describe t	o the de	pth need	led to docur	nent the i	ndicato	r or co	onfirm the absence of indicators.)	
0-0-3 2.5Y 4/2 100 Silty Clay 03-10 2.5Y 4/2 60 2.5Y 3/1 40 D M Sandy Clay TU-T2 2.5Y 4/2 50 2.5Y 3/1 50 D M Silty Clay Very hard horizon. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix, Hydric Soll indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators (Applicable to Applicable to all LRRs, unless otherwise noted.) Indicators (Applicable to Applicable to all LRRs, unless otherwise noted.) Indicators (Applicable to Applicable to										2	
Type: C=Concentration. D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix, Plantics of Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soils*: 1 cm Muck (A9) (LRR I, J) Cass Hydric Soils*: 1 cm Muck (A9) (LRR I, G, H) Dark Surface (R) Hydric Soils*: 1 cm Muck (A9) (LRR I, G, H) Dark Surface (R) Hydric Soils*: 1 cm Muck (A9) (LRR I, G, H) Dark Surface (R) Hydric Soils*: 1 cm Muck (A9) (LRR I, G, H) Dark Surface (R) Hydric Soils*: Redox Dark Surface (R) Hydric Soil Present Material (TF2) Casel Medical Version (R) Redox Dark Surface (R) Redox	(inches)	Color	(moist)	%	Cold	or (moist)		_Туре	<u> Lc</u>		
Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration, D=Depletion Matrix. CS=Covered or Ceated Sand Grains. Type: C=Concentration Sa	0-03	2.5Y	4/2	100				-	_	S <u>ilty Clay</u>	
Type: C=Concentration. D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.	03-10	2.5Y	4/2	60	2.5Y	3/1	40	D	М	Sandy Clay	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	10-12	2.5Y	4/2	50	2.5Y	4/1	50	D	M	Silty Clay Very hard horizon.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)								-			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)								,			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	1_ 0 0									2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Histosol (A1)									ited Sa		
Sandy Redox (S5)			s. (Applice	ibic to ai	i Litito,				,		
Black Histic (A3)			12)				-		,		
Hydrogen Sulfide (A4)			12)							_	
Statified Layers (A5) (LRR F)		. ,	(A4)				,	,	1)		
1 cm Muck (A9) (LRR F, G, H))							
□ Depleted Below Dark Surface (A11) □ Redox Dark Surface (F6) □ Red Parent Material (TF2) □ Depleted Dark Surface (F7) □ Very Shallow Dark Surface (TF1) □ Depleted Dark Surface (F7) □ Very Shallow Dark Surface (TF12) □ Sandy Mucky Mineral (S11) □ Redox Depressions (F8) □ Other (Explain in Remarks) □ 1.5 cm Mucky Peat or Peat (S2) (LRR G, H) □ High Plains Depressions (F16) □ Other (Explain in Remarks) □ 1.5 cm Mucky Peat or Peat (S3) (LRR F) □ High Plains Depressions (F16) □ Other (Explain in Remarks) □ 1.5 cm Mucky Peat or Peat (S3) (LRR F) □ MLRA 72 & 73 of LRR H) □ Wetland hydrology must be present, unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ Unless disturbed or problematic. **Restrictive Layer (if present): □ No □ Depth (inches): □ Unless disturbed or problematic. **Hydric Soil Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hydrology Present? Yes □ No □ Depth (inches): □ Wetland Hyd	=	• (, ,	,		_	-		,		
Thick Dark Surface (A12)		100		-		_ :		-			
2.5 cm Mucky Peat or Peat (S2) (LRR G, H)						Deplete	d Dark Su	ırface (F	7)		
S cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes V No Depth (inches): Secondary Indicators: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HyDROLOGY Wetland Hydrology Indicators: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HyDROLOGY Wetland Hydrology Indicators: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HyDROLOGY Wetland Hydrology Indicators: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. Hydrology Indicators: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. Hydrology Indicators: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches beginning 3 inches beginning 3 inches of the surface (B8) Secondary Indicators (minimum of two required) Visurface Soil Cracks (B6) Secondary Indicators (minimum of two required) Visurface Soil Cracks (B6) Secondary Indicators (minimum of two required) Visurface Soil Cracks (B6) Secondary Indicators (minimum of two required) Visurface Soil Cracks (B6) Secondary Indicators (minimum of two required) Visurface Soil Cracks (B6) Secondary Indicators (minimum of two required) Visurface Soil Cracks (B6) Visurface Soil Cra	Sandy M	lucky Min	eral (S1)			Redox [Depressio	ns (F8)		Other (Explain in Remarks)	
Restrictive Layer (if present): Type:	2.5 cm N	/lucky Pea	at or Peat (S	52) (LRR	G , H)	High Pla	ains Depre	essions	(F16)	³ Indicators of hydrophytic vegetation and	
Restrictive Layer (if present): Type: Depth (inches): No Remarks: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Saturation (A3) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B3) Mere not tilled) Crayfish Burrows (C8) Mater Gald Mat or Crust (B4) Presence of Reduced Iron (C4) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Field Observations: Surface Water Present? Ves No Depth (inches): Water Table Present? Ves No Depth (inches): Saturation Present? Ves No Depth (inches): Saturation Present? Ves No Metland Phydrology Present? Ves No Moderning well, aerial photos, previous inspections), if available:	5 cm Mu	icky Peat	or Peat (S3) (LRR F)	(ML	RA 72 & 7	73 of LF	RR H)	wetland hydrology must be present,	
Type: Depth (inches): Remarks: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Surface (A										unless disturbed or problematic.	
Hydric Soil Present? Yes No	Restrictive I	_ayer (if p	oresent):								
Remarks: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Orift Deposits (B3) (where not tilled) Presence of Reduced Iron (C4) Inundation Visible on Aerial Imagery (B7) Mater-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches):	Type:										
Remarks: Depleted matrix indicated by value of 4 and chroma of 2 or less, and distinct redoximorphic features beginning 3 inches below the soil surface. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Orift Deposits (B3) (where not tilled) Presence of Reduced Iron (C4) Inundation Visible on Aerial Imagery (B7) Mater-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches):	Depth (in	ches):								Hydric Soil Present? Yes No	
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) □ Surface Water (A1) □ Salt Crust (B11) ☑ Surface Soil Cracks (B6) □ High Water Table (A2) □ Aquatic Invertebrates (B13) □ Sparsely Vegetated Concave Surface (B8) □ Saturation (A3) □ Hydrogen Sulfide Odor (C1) ☑ Drainage Patterns (B10) □ Water Marks (B1) □ Dry-Season Water Table (C2) □ Oxidized Rhizospheres on Living Roots (C3) □ Sediment Deposits (B2) ☑ Oxidized Rhizospheres on Living Roots (C3) (where tilled) □ Crayfish Burrows (C8) □ Drift Deposits (B3) (where not tilled) □ Crayfish Burrows (C8) □ Saturation Visible on Aerial Imagery (C9) □ Iron Deposits (B5) □ Thin Muck Surface (C7) ☑ Geomorphic Position (D2) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ FAC-Neutral Test (D5) □ Water-Stained Leaves (B9) □ Popth (inches): □ Wetland Hydrology Present? Yes ☑ No ☑ Depth (inches): Saturation Present? Yes ☐ No ☑ Depth (inches): Wetland Hydrology Present? Yes ☑ No ☐ Depth (inches): Saturation Present? Yes ☐ No ☑ Depth (inches): Wetland Hydrology Present? Yes ☑ No ☐ Depth (inches): Obscribe Recorded D					value c	f 4 and chr	oma of 2	or less	s, and	distinct redoximorphic features beginning 3 inches	
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Surface Water (A1)	_			ne require	ed: check	all that apply	v)			Secondary Indicators (minimum of two require	
High Water Table (A2)		,									
Saturation (A3)					_	_		s (B13)		_	
Water Marks (B1) □ Dry-Season Water Table (C2) □ Oxidized Rhizospheres on Living Roots (C3) □ Drift Deposits (B2) □ Oxidized Rhizospheres on Living Roots (C3) □ Oxidized Rhizospheres on Living Roots (C3) □ Drift Deposits (B3) □ Oxidized Rhizospheres on Living Roots (C3) □ Oxidized Rhizosph			(/ 1.2)			- '		,			
Sediment Deposits (B2) □ Drift Deposits (B3) □ Voxidized Rhizospheres on Living Roots (C3) □ Drift Deposits (B3) □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Iron Deposits (B5) □ Inundation Visible on Aerial Imagery (B7) □ Water-Stained Leaves (B9) □ Trion Muck Surface (C7) □ Other (Explain in Remarks) □ FAC-Neutral Test (D5) □ Frost-Heave Hummocks (D7) (LRR F) Field Observations: Surface Water Present? Ves □ No □ Depth (inches): Water Table Present? Yes □ No □ Depth (inches): Saturation Present? Yes □ No □ Depth (inches): Saturation Present? Yes □ No □ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		. ,			-						
Drift Deposits (B3) (where not tilled) ☐ Crayfish Burrows (C8) Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☑ Geomorphic Position (D2) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ FAC-Neutral Test (D5) ☐ Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7) (LRR F) Field Observations: Surface Water Present? Yes ☐ No ☑ Depth (inches): ☐ Water Table Present? Yes ☐ No ☑ Depth (inches): ☐ Wetland Hydrology Present? Yes ☐ No ☐ Depth (inches): ☐ Wetland Hydrology Present? Yes ☐ No ☐ Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	_	` ′				-					
✓ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ✓ Geomorphic Position (D2) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ FAC-Neutral Test (D5) ☐ Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7) (LRR F) Field Observations: Surface Water Present? Water Table Present? Yes ☐ No ☑ Depth (inches): Saturation Present? Yes ☐ No ☑ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					•	_	=		y 1	·	
☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☐ Geomorphic Position (D2) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ FAC-Neutral Test (D5) ☐ Frost-Heave Hummocks (D7) (LRR F) Field Observations: Surface Water Present? Yes ☐ No ☑ Depth (inches): ☐ Saturation Present? Yes ☐ No ☑ Depth (inches): ☐ Saturation Present? Yes ☐ No ☑ Depth (inches): ☐ Wetland Hydrology Present? Yes ☐ No ☐ Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						_			C4)		
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ FAC-Neutral Test (D5) ☐ Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7) (LRR F) Field Observations: Surface Water Present? Yes ☐ No ☑ Depth (inches): ☐ Water Table Present? Yes ☐ No ☑ Depth (inches): ☐ Saturation Present? Yes ☐ No ☑ Depth (inches): ☐ Wetland Hydrology Present? Yes ☑ No ☐ Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					<u> </u>			-	○ ¬,		
Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		, ,		maden, (I	R7)		,				
Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	_			nagery (i	, <u> </u>	L Other (Exp	nam m re	iliai K3)			
Surface Water Present? Yes No Depth (inches):			aves (Da)							Trost-fleave flutiliflocks (DT) (ERR F)	
Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			(O)/		🔽	D	-1>				
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					_	_					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				es <u> </u>	No	<u>r</u> _ Depth (ind	ches):			Wetland Hydrology Present? Yes No	
Remarks: Algal mat/crust observed on soil surface.				gauge, m	onitoring	well, aerial	ohotos, pr	evious i	nspect	tions), if available:	
Remarks: Algal mat/crust observed on soil surface.											
g	Remarks: ΔΙ	nal mat/c	rust obse	rved on	soil surf	ace.					
	, "	Algai mationat observed on soil surface.									

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW East	City/County: Rosebud	Sampling D)ate: 7/9/2020
Applicant/Owner: MDT		State: Montana_ Sampling P	oint: DP02u
Investigator(s): R. Jones	Section, Township, Range	:34 7N	39E
Landform (hillslope, terrace, etc.): Hillside			
Subregion (LRR): LRR G Lat:	-		
Soil Map Unit Name: 98: Harlem silty clay, 0-2 percent slopes, o			
Are climatic / hydrologic conditions on the site typical for this time of y			
			. V N. D
Are Vegetation, Soil, or Hydrology significantl	/ disturbed? Are "Nor	mai Circumstances" present? Ye	.s <u> </u>
Are Vegetation, Soil, or Hydrology naturally p			
SUMMARY OF FINDINGS – Attach site map showin	sampling point loca ر	itions, transects, importa	nt features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Are	ea	
Hydric Soil Present? Yes No _✔ Wetland Hydrology Present? Yes No ✔		Yes No _	
Remarks: Upland sample point adjacent tp DP02w.			
VEGETATION II : (G			
VEGETATION - Use scientific names of plants Absolute Domiai	nt Indicator		
<u>Tree Stratum</u> Plot size (30 Foot Radius) % Cover: Specie	s? Status	Dominance Test worksheet	
		Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
		Total Number of Dominant Species Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)
<u></u>	1	Prevalence Index worksheet	
	-	Total % Cover of:	Multiply by:
		OBL species 0 X 1	0
		FACW species 0 X 2 FAC species 0 X 3	0
		FACU species 38 X 4	152
Herbaceous Stratum Plot size (5 Foot Radius)	l լ	UPL species 2 X 5	10
Elymus repens 15 Elymus trachycaulus 2	FACU FACU	Column Totals 40 (A)	162 (B)
	FACU	. ,	4.05
Pascopyrum smithii 20 Poa compressa 3	FACII	Prevalence Index = B/A =	
1 ou compresse		Hydrophytic Vegetation Indicato	
		1 - Rapid Test for Hydroph	
		2 - Dominance Test is >50	
		☐ 3 - Prevalence Index is <=	3.0
		 4 - Morphological Adaptatic supporting data in remarks sheet. 	
		5 - Wetland Non-Vascular	Dlante
Woody Vine Stratum Plot size (30 Foot Radius)		☐ Problematic Hydrophytic V	egetation (Explain)
Thorage (50 Feet hadde)		dicators of hydric sil and wetland hesent, unless disturbed or problen	
Percent Bare Ground 60		Hydrophytic Vegetation Present? Yes	NO 🗸
Remarks:			
BG/litter=60%. Road right of way subject to disturbance.			

US Army Corps of Engineers Great Plains - Version 2.0

SOIL Sampling Point: DP02u

Profile Desc	cription: (Describe	to the de	oth neede	d to docun	nent the i	ndicato	r or confi	rm the absence	of indicators.)
Depth		Matrix				x Features			_	
(inches)	Color	(moist)	%	Color	(moist)	%	_Type ¹	_ Loc ² _	Texture	Remarks
0-06	2.5Y	4/2	_100_	-					Silty Clay	
06-14	7.5YR	4/1	30						Silty Clay	Mixed matrix.
06-14	2.5YR	4/2	70	7.5YR	4/1	30	R	M	Silty Clay	Mixed matrix.
				-			-			
							-			
							-			
								_		
¹Type: C=C	oncentratio	on, D=Dep	etion, RM	=Reduced	l Matrix, CS	=Covered	d or Coa	ted Sand	 Grains. ² Loc	eation: PL=Pore Lining, M=Matrix.
Hydric Soil										for Problematic Hydric Soils ³ :
Histosol	(A1)				☐ Sandy G	Sleyed Ma	trix (S4)		1 cm N	luck (A9) (LRR I, J)
Histic E	pipedon (A	.2)			Sandy F	Redox (S5)		Coast I	Prairie Redox (A16) (LRR F, G, H)
	istic (A3)			_		l Matrix (S	,		_	urface (S7) (LRR G)
$=$ \cdot	en Sulfide (` '		_	_	Mucky Mir				lains Depressions (F16)
	d Layers (A			_	_	Gleyed Ma)		R H outside of MLRA 72 & 73)
	ıck (A9) (L				= :	d Matrix (F			_	ed Vertic (F18)
	d Below Da ark Surface		(ATT)	<u></u>	_	Oark Surfa d Dark Su	. ,	7)		arent Material (TF2) hallow Dark Surface (TF12)
	Jucky Mine			_		o Dark Su Depression		')		Explain in Remarks)
_	Mucky Pea		S2) (LRR	G. H)	_	ins Depre		F16)		of hydrophytic vegetation and
	icky Peat	,	, ,			RA 72 & 7				d hydrology must be present,
	•	•			,			ŕ		disturbed or problematic.
Restrictive	Layer (if p	resent):								
Type:										
Depth (in	ches):								Hydric Soil	Present? Yes No
Remarks: M	lixed matı	rix. No hy	dric soil i	ndicators	observed	during s	ite visit	 t.	1	
		•				· ·				
HYDROLO	GY									
Wetland Hy		dicators:								
Primary India			ne require	d check a	II that apply	A)			Seconda	ry Indicators (minimum of two required)
-	Water (A1		no roquire		Salt Crust	,				ace Soil Cracks (B6)
	ater Table				Aquatic Inv		s (B13)			rsely Vegetated Concave Surface (B8)
Saturation		(/ (2)			Hydrogen		,			nage Patterns (B10)
	larks (B1)				Dry-Seaso				=	lized Rhizospheres on Living Roots (C3)
_	nt Deposits	s (B2)			Oxidized R					here tilled)
	posits (B3)					not tilled)				rfish Burrows (C8)
	at or Crust				Presence		d Iron (0	C4)		ration Visible on Aerial Imagery (C9)
	osits (B5)	(- ·)			Thin Muck			/		morphic Position (D2)
	on Visible	on Aerial I	magerv (F		Other (Exp	,				-Neutral Test (D5)
_	tained Lea				(,,,,,,,,,,,,		_	t-Heave Hummocks (D7) (LRR F)
Field Obser		. ,								
Surface Wat	er Present	? Y	es 🗌	No 🗸	Depth (inc	ches):				
Water Table	Present?		es 🗌		Depth (ind					
Saturation P	resent?	Y	es 🗌		Depth (inc				tland Hydrology	y Present? Yes No
(includes car	pillary fring	e)								
Describe Re	corded Da	ıa (stream	yauge, m	onitoring v	veii, aeriai p	motos, pr	evious ir	spections	s), if available:	
Domarka										
Remarks: No	o evidenc	e of wetla	nd hydro	logy obs	erved.					

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Forsyth NW East	City/County: Rosebud	Sampling [)ate:7/9/2020
Applicant/Owner: MDT		_ State: Montana_ Sampling P	oint: DP02w
Investigator(s): R. Jones	Section, Township, Range:	34 7N	39E
Landform (hillslope, terrace, etc.): Swale			
Subregion (LRR): LRR G Lat:			
Soil Map Unit Name: 98: Harlem silty clay, 0-2 percent slopes, o			
Are climatic / hydrologic conditions on the site typical for this time of y			
Are Vegetation, Soil, or Hydrology significantly			es 🗹 No 🗆
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	explain any answers in Remark	(s)
SUMMARY OF FINDINGS – Attach site map showing			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: PEM, DEPRESSIONAL wetland.	is the Sampled Area	a Yes <u>V</u> No _	<u></u>
VEGETATION - Use scientific names of plants			
Trace Structure Plat size (CO. Foot Posting) Absolute Domiar	t Indicator De	ominance Test worksheet	
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	s? Status No	umber of Dominant Species at are OBL, FACW or FAC:	2 (A)
		otal Number of Dominant pecies Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		ercent of Dominant Species hat Are OBL, FACW, or FAC:	100.0 % (A/B)
,	Pi	revalence Index worksheet	
		Total % Cover of: BL species 30 X 1	Multiply by:
		ACW species 35 X 2	70
		AC species 0 X 3	0
Herbaceous Stratum Plot size (5 Foot Radius)		ACU species 1 X 4	4
Convolvulus arvensis 1	UPL	PL species 6 X 5	30
Eleocharis palustris 30	OBL	olumn Totals 72 (A)	134 (B)
Elymus repens 1	FACU	Prevalence Index = B/A =	1.86
Hordeum jubatum 35	FACW	ydrophytic Vegetation Indicato	rs
Puccinellia nuttalliana 5	OBL	1 - Rapid Test for Hydroph	ytic Vegetation
		✓ 2 - Dominance Test is >50	%
		✓ 3 - Prevalence Index is <=	3.0
		4 - Morphological Adaptatic supporting data in remarks sheet.	
		5 - Wetland Non-Vascular	Dlante
Woody Vine Stratum Plot size (30 Foot Radius)		☐ Problematic Hydrophytic Vicators of hydric sil and wetland hent, unless disturbed or problen	nydrology must be
Percent Bare Ground 28	H	ydrophytic Vogotation	NO □
Remarks:			
BG/litter=28%			

US Army Corps of Engineers Great Plains - Version 2.0

SOIL Sampling Point: DP02w

Profile Desc	cription: (Describe	to the de	th need	ed to docun	nent the i	ndicato	or or c	onfirm the absence	of indicators.)	
Depth Matrix Redox Features											
<u>(inches)</u>	Color	(moist)	%	Color	(moist)	%	Type	<u> </u>	.oc ² <u>Texture</u>	Remarks	
0-01	2.5YR	4/2	93_	2.5YR	5/8	7_	C	_ <u>M</u> _	Silty Clay Loam		
01-14	2.5YR	4/2	67	7.5YR	4/6	3	С	М	Clay	Concentrations.	
01.14	2 5 7 D	1/2	-67	KI	4/0	- 20		_ \7	Clov	Claused depletions	
01-14	2.5YR	4/2	67	IN	4/0	30	D	M	Clay	Gleyed depletions.	
	-			-							
¹ Type: C=C	oncentratio	on, D=Dep	letion, RM	=Reduce	d Matrix, CS	=Covered	d or Coa	ated S		cation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators	: (Applic	able to all	LRRs, u	nless other	wise note	ed.)		Indicators	for Problematic Hydric Soils ³ :	
Histosol	(A1)				Sandy C	Sleyed Ma	ıtrix (S4)	1 cm M	/luck (A9) (LRR I, J)	
Histic E	pipedon (A	.2)			Sandy F	Redox (S5)		Coast	Prairie Redox (A16) (LRR F, G, H)	
	istic (A3)			-		l Matrix (S	,		_	Surface (S7) (LRR G)	
	en Sulfide (-		Mucky Mir				lains Depressions (F16)	
_	d Layers (A			-	= -	Gleyed Ma	,	()		RR H outside of MLRA 72 & 73)	
	uck (A9) (L			-	_ ·	d Matrix (l	-		_	ed Vertic (F18)	
	d Below Da		e (A11)	-	=	Dark Surfa	,			arent Material (TF2)	
_	ark Surface			-		d Dark Su Depressior		.7)		hallow Dark Surface (TF12) (Explain in Remarks)	
	Jucky Mine Vucky Pea		S2) (I PP	с н/		ains Depre		(F16)		of hydrophytic vegetation and	
_	ucky Peat o	•	, ,			RA 72 & 7				d hydrology must be present,	
			, (=: :: :)		(,		disturbed or problematic.	
Restrictive	Layer (if p	resent):								·	
Type:											
Depth (in	ches):								Hydric Soil	Present? Yes No	
Remarks: D	istinct and	d promine	ent redox	imornhic	denletion	s and ma	anv red	oximo	ornhic concentration	ns within the matrix.	
	istinot and	а ргоппп	JIIL ICGOX	morpine	dopiction	s and me	arry rod	OXIIII		no within the matrix.	
HYDROLO	GY										
Wetland Hy	drology In	dicators:									
Primary Indi	cators (min	<u>iimum of o</u>	ne require	d; check	all that apply	y)			Seconda	ary Indicators (minimum of two required)	
Surface	Water (A1)			Salt Crust	(B11)			✓ _ Sur	ace Soil Cracks (B6)	
High Wa	ater Table ((A2)			Aquatic Inv	/ertebrate	s (B13)		Spa	rsely Vegetated Concave Surface (B8)	
Saturati	on (A3)				Hydrogen	Sulfide Od	dor (C1))	Dra	nage Patterns (B10)	
Water M	larks (B1)				Dry-Seaso				Oxid	dized Rhizospheres on Living Roots (C3)	
Sedime	nt Deposits	s (B2)			Oxidized F					vhere tilled)	
	posits (B3)					not tilled)		-	` ,	yfish Burrows (C8)	
	at or Crust				Presence			C4)		uration Visible on Aerial Imagery (C9)	
	oosits (B5)				Thin Muck			,	=	emorphic Position (D2)	
	on Visible		magery (E	7)	Other (Exp	,				C-Neutral Test (D5)	
	Stained Lea			<i>,</i> —	` .		ŕ			st-Heave Hummocks (D7) (LRR F)	
Field Obser										. , , , ,	
Surface Wat		? Y	es 🗆	No 🗸	_ Depth (inc	ches):					
Water Table					_ Depth (inc						
Saturation P					_ Depth (inc _ Depth (inc				Wetland Hydrolog	y Present? Yes No	
(includes ca			-3 <u> </u>	140	_ pehin (inc	اردی)			*velialiu flyulolog	y 1 1636111: 163 NO	
			gauge, m	onitoring	well, aerial p	photos, pr	evious i	nspec	tions), if available:		
Remarks: Cr	acks in th	ne soil su	rface wei	e obser	ed indicat	ing that t	he soil	has I	become dry followi	ng a period of saturation.	

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name Forsyth NW - East	2. MDT project#	STPP STWD (756)	Control	9 680000
3. Evaluation Date 7/8/2020 4. Evaluators	R Jones 5.	Wetland/Site# (s) Fo	orsyth NW - East	
6. Wetland Location(s): T Approx Stationing or Mileposts 7 N R 3 -262.3 on US 12	9 E Sec1 34	T R	Sec2	
	itershed/County Roseb	ud		
7. Evaluating Agency CCI for MDT		8. Wetland size	acres	0.56
Purpose of Evaluation		How assessed:		
☐ Wetlands potentially affected by MDT project		9. Assesssmen		0.56
☐ Mitigation Wetlands: pre-construction		(AA) size (acres		
✓ Mitigation Wetlands: post construction		How assessed:	Measured e.	g. by GPS
☐ Other				
10. Classification of Wetland and Aquatic Habitats	in AA			
HGM Class (Brinson) Class (Cowardin)	Modifier (Cowardi	n) Water Regin	ne % c	of AA
Depressional Emergent Wetland	Excavated	Seasonal/Interm		100
11. Estimated Relative Abundance Abundant				
 12. General Condition of AA i. Disturbance: (use matrix below to determine [circle] a aquatic nuisance vegetation species (ANVS) lists) 	ppropriate response – see inst	ructions for Montana-listed	d noxious weed and	
		minant conditions adjacent to (v		ad or boovily grazed
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%.	moderately grazed or hayed selectively logged; or has be subject to minor clearing; co few roads or buildings; noxic weed or ANVS cover is <=30	or or logged; subseen placement, grantains hydrological abus building densi	id or heavily grazed opect to substantial fill adding, clearing, or alteration; high road or ity; or noxious weed or is >=30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <=15%.	low disturbance	low disturbance	e moderat	e disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=30%.	moderate disturbance	moderate disturba	nnce high o	disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >=30%.	high disturbance	high disturbance	e high c	listurbance
Comments: (types of disturbance, intensity, season AA experinced a decrease in vegetatative cover in 2020 basin continues to qualify as upland as it has not developed to the continue of the), possilby due to decrease		compared to recent	years. Center of
ii. Prominent noxious, aquatic nuisance, other exoti	c species:			
Tamarix chinensis, Convolvulus arvensis	rrounding land use/babits			
iii. Provide brief descriptive summary of AA and sur AA is a roadside depression excavated parallel to US 1:			and a secondary hig	hway.

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

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	ls current management existence of additional		Modified Rating
>= 3 (or 2 if 1 is forested) classes	Н	NA	NA	NA
2 (or 1 if forested) classes	М	NA	NA	NA
1 class, but not a monoculture	М	<no< td=""><td>YES></td><td>L</td></no<>	YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

റ	m	m	Δ	ní	•

Emergent vegetation is dominant presentbut cottonwood saplings are becoming well established. Some portinos of the site may evnetually transition to PSS.

SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT												
14A. Habitat for Federally	Listed or Pro	posed Threate	ned or Endangere	d Plants or Anima	ls:							
i. AA is Documented	(D) or Suspect	ed (S) to conta	in (check one bas	ed on definitions	contained in inst	ructions):						
Primary or critical habita	t (list species)	□ D) S									
Secondary habitat (list S	pecies)	(D () s									
Incidental habitat (list sp	ecies)	① D ①) s									
No usable habitat		✓ S										
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 Rating	1H	.9H	8H	.7M	.3L	.1L	OL					
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):												
in14A above)					,		d					
in14A above)) or Suspected	d (S) to contain	n (check one base S Scarlet Amm		ontained in instru	ctions):						
in 14A above) i. AA is Documented (December 14 above) Primary or critical habitates Secondary habitat (list Special secondary habitat (list Special secondary habitat (list Special secondary habitat secondary habitat (list Special secondary habitat secondary habi	o) or Suspected t (list species) pecies)	(S) to contain	S Scarlet Amm	d on definitions co	ontained in instru	ctions):						
in 14A above) i. AA is Documented (December 14 above) Primary or critical habitat Secondary habitat (list Spondental h	o) or Suspected t (list species) pecies)	d (S) to contain D (S Scarlet Amm S Great Blue H	d on definitions co	ontained in instru	ctions):						
in 14A above) i. AA is Documented (D Primary or critical habitat Secondary habitat (list Secondary habitat (list secondary habitat) No usable habitat	o) or Suspected t (list species) pecies) ecies)	d (S) to contain D D D	S Scarlet Amm S Great Blue H	d on definitions co	ontained in instru	ections): stern Hog-nosed S						
in 14A above) i. AA is Documented (December 14 above) Primary or critical habitat Secondary habitat (list Spondental h	o) or Suspected t (list species) pecies) ecies)	d (S) to contain D D D	S Scarlet Amm S S Great Blue H S atrix below to arriv	d on definitions co	ontained in instru	ections): stern Hog-nosed S						
in 14A above) i. AA is Documented (D Primary or critical habitat Secondary habitat (list Secondary habitat (list secondary habitat) No usable habitat	o) or Suspected t (list species) pecies) ecies)	d (S) to contain D D D	S Scarlet Amm S Great Blue H	d on definitions co	ontained in instru	ections): stern Hog-nosed S						
in 14A above) i. AA is Documented (D Primary or critical habitat Secondary habitat (list Sp Incidental habitat (list sp No usable habitat ii. Rating (use the cond	t (list species) pecies) ecies)	(S) to contain	S Scarlet Amm S S Great Blue H S Great below to arrive	d on definitions contains annia - Ammannia eron (S3)	ontained in instru	stern Hog-nosed S	Snake					
in 14A above) i. AA is Documented (Discounting or critical habitat Secondary habitat (list Spinoidental habitat (list spinoidental habitat (list spinoidental habitat ii. Rating (use the conditional Highest Habitat Level	t (list species) pecies) ecies) lusions from i a	D (S) to contain D (S) D	S Scarlet Amm S Great Blue H S atrix below to arrive doc/secondary	d on definitions containing - Ammannia eron (S3) e at [check] the fun sus/secondary	ontained in instru robusta (S2), Wes ctional points and doc/incidental	rating) sus/incidental	Snake None					

documented use

																			Low			
<i>ıbstantial</i> (base	d on any	of the	followin	g [che	ck]):							•		•			[check]					
observations				_				-		d)	=				vations	during	g peak ι	ise peri	ods			
abundant wild	dlife sigr	such a	ıs scat,	tracks	, nest st	tructure	s, game	trails.	, etc.		✓ li	ittle to r	o wildli	fe sign								
presence of e			-				ole in the	e surro	ounding	area			adjacen									
interviews wit	h local b	oiologist	is with k	nowle	dge of t	he AA					ir	nterviev	vs with	local bi	ologists	with k	nowled	ge of the	e AA			
oderate (based	on any c	f the fo	llowing	[check	:]):																	
observations			•	•				•				eriods										
common occ			•		s scat,	tracks,	nest str	ucture	s, game	trails, e	etc.											
adequate adj																						
interviews wit	th local b	oiologist	is with k	nowle	dge of t	he AA																
permanent/per erms]) Structural diversity (see	ennial;	S/I = s	season		ermitte	ent; T/E	= tem	npora	ry/ephe	emeral	; and <i>i</i>	A = ab Mode		see ins	tructio	ns foi	r turthe	er defin Lo		of thes	se	
‡13) Class cover distribution (all		Eve	en			Une	ven			Even Uneven Even								en	n			
regetated classes)									Zio													
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	Α	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		
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 listurbance at AA see #12i)	Н	Н	Н	Н	Н	Н	Н	М	Н	Н	М	М	Н	М	М	L	н	М	L	L		
ligh 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 (Evidence of t							above	and t	the ma	V	Vildlife		ve at		ratin	g (ii)		points	and i	rating		
Substantial			+		Except	- 1		H		High						derat	e I				Low	T
Moderate			+		1E .9F	- 1		Н		.9I .7I	_				-	.8H 5M	\vdash				.7M .3L	H
Mississal					.6N	_		Н		.4	_					.2L	Н				.1L	H
Minimal										.4	IVI											hig

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

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

Duration of surface water in AA			Seasonal / Intermittent							Temporary / Ephemeral								
Aquatic hiding / resting / escape cover	Opt	timal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Adeo	quate	Po	or
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	.9Н	.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 Intro duced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially for ii. Modified Rating (NOTE: Modified score car a) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of fishery or aquatic life support, or do aquatic nuisa yes, reduce score in i above by 0.1: Modified I	nnot excee culvert, dik TMDL deve	ke, or other m elopment with	nan-made s h listed "Pr	structure or obable Imp	aired Úse	s" includin	g cold or w	arm water		
b) Does the AA contain a documented spawning a comments) for native fish or introduced game fish	area or oth	er critical hab		•	he adjuste		g area, etc. i or iia abo		1	
iii. Final Score and Rating: 0 NA	Commen	ts: No fish	habitat e	exists on	site.					
14E. Flood Attenuation: (Applies only to wetlar channel or overbank flow, click NA here	nds subjec and proce	t to flooding ved to 14F.)	via in-chan	nel or overl	bank flow.	If wetland	ds in AA ar	e not flood	ed from in-	
i. Rating (working from top to bottom, use the n Estimated or Calculated Entrenchment (Rosgen	natrix belov	v to arrive at			points ar		Entrench	ned-A, F, G	stream	
1994, 1996) % of flooded wetland classified as forested	- ,	stream types	s	S	stream typ T	е		types		
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	Entrenched			-	intrenched			7
ER = >2.2 C stream type	type		41 – 2.2		stream type	El	R = 1.0 - 1.4 F stream typ		stream type	_

2 x Bankfull Dep		Bankfull D	epth	विके	LVK	Flood-pro	th			
Floodprone width	/ Bank				=	ratio	chment			
ii. Are ≥10 acres of wetland in the AA subject to within 0.5 mile downstream of the AA (check)?	flooding AN Y ()	ND are man-r N	made featu	res which i	may be si	gnificantly	damaged b	y floods lo	cated	
AA not subject to flooding.										
 14F. Short and Long Term Surface Wat upland surface flow, or groundwater flow. 14G.) i. Rating (Working from top to bottom, us water durations are as follows: P/P = perm further definitions of these terms].) 	If no wetla	ands in the A	AA are su arrive at	bject to flo [check] th	ooding o	r ponding nal points	, dick [s and ratin	NA her	e and proce	eed to surface
Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic		>5 acre feet			1.1 to	5 acre feet			≤1 acre foot	
flooding or ponding 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
	1H	.9H	.8H	.81	<u> </u>	.6M	.5M	.4M	21	.2L
Wetlands in AA flood or pond ≥ 5 out of 10 years					-	1		-	.3L	
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.71	М	.5M	.4M	.3L	.2L	.1L

Comments: AA subject to pond from precipitation and upland surface flow.

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= low	1)	•	ttom, use t	the matri	x below to	arrive at [[check]	the function	al points	s and rating [H = high,	M = mo	oderate, o
Sediment, nutrient, and toxicant input levels within AA			to d compoi not su	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.					Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaire. Major sedimentation, sources of nutrients or toxicants, or sign of eutrophication present.				
	rer of wetland vegeta nce of flooding / por		≥	70%		< 70%			≥ 70	%		< 70	%
viuei	rice of flooding / por	iding iii AA	Yes	No	Ye	s	No	Ye	s	No	Yes	;	No
A co	ntains no or restric	ted outlet	1H	.8H	.71	И	.5M	.51	М	.4M	.3L		.2L
AA contains unrestricted outlet		outlet	.9H	.7M	.61	л	.4M	.41	и	.3L	.2L		.1L
	ments: Vegetat					or within th	he banks	or a river, st	eam, or	other <u>na</u> tural o	r man-mac	de	
aina ocee	ige, or on the shore ed to 14I.) ting (working from er of wetland streamb	line of a stan	ding water b	body which	n is subject v to arrive a	to wave ac	ction. If 1	4H does not	apply, cli			1	
orelir	ne by species with stai		Perman	nent / Peren			onal / Inter		Ť	emporary / Epher	meral	1	
≥6 (s 65%	see Appendix F).		1 Cillian	1H	Tilal	00030			.7M	norai			
≥ 65% 35-64%					.9H		.7M						
5-64%	6			.7M			.6M	l .		.JIVI			
35%	NA - no	open water	exists on	.3L			.6M .2L			.1L			
35% omm 14l. i. L		ort/Food Cha	nin Support othesis of wi	.3L site.			.2L						
35% mm 14l. i. L	NA - nonents: Production Expo	ort/Food Cha	nin Support othesis of wi	.3L site.			.2L						
35% mm 14l. i. L	NA - nonents: Production Exponents of Biological neral Fish Habitat	Activity (syr	nin Support othesis of wi	site.		(14C.iii.) L	.2L						
35% mm 14l. i. L	NA - nonents: Production Exponents Level of Biological neral Fish Habitat Rating (14D.iii.) E/H M	Activity (syr	nin Support othesis of wi	site.		(14C.iii.) L M	.2L						
35% omm 14l. i. L	NA - nonents: Production Exponents of Biological fish Habitat Rating (14D.iii.)	Activity (syr	nin Support othesis of wi	site.		(14C.iii.) L	.2L						
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mmm 14I. i. L Ger F	NA - nonents: NA - nonents: Production Exponents of Biological neral Fish Habitat Rating (14D.iii.) E/H M L N/A Ating (Working from ad component in the frace outlet; the finantructions for furtheres.	Activity (syr	m, use the r B = level of pertain to do of these terms acres	site. site. site. H M M M M matrix belebiological uration of rms].	ow to arrive activity ratissurface wa	M M L at [check] t er in the AA	eck]) the functione (141.iA, where the things of the second test of th	.); Factor C = P/P, S/I, and	whether	.Factor A = a or not the AA as previously Vegetated c	contains a defined, ar	surface nd A = "a	e or
mmm 14I. i. L Gei	NA - nonents: Production Exponents of Biological neral Fish Habitat Rating (14D.iii.) E/H M L N/A Ating (Working from a component in the frace outlet; the finantsructions for furth the fire the fire of the fire the fire the fire outlet; the fire the	Activity (syr	m, use the r B = level of pertain to do of these terriacres Low Yes	site. t: ildlife and Idlife Hab M M M M matrix beld biological uration of ms].)	ow to arrive activity ratis surface wa	M M L at [check] t ng from abc ter in the A/ etated compon Modera Yes	eck]) the functione (141.iA, where the things of the second test of th	.); Factor C = P/P, S/I, and es Low	whether	.Factor A = a or not the AA as previously Vegetated c gh M	contains a defined, ar omponent <1 a oderate No	surface nd A = "a	e or absent"
35% omm 14I. i. L Gei f Raa etlan ubsu ee ir	NA - nonents: NA - nonents: Production Exponents of Biological neral Fish Habitat Rating (14D.iii.) E/H M L N/A Ating (Working from ad component in the frace outlet; the finantructions for furth legal with the first outlet of the first outlet of the first outlet of the first outlet	Activity (syr E/H	m, use the r B = level of pertain to do of these terriacres Low Yes in Support	site. t: ildlife and Idlife Hab M M M M M M M M M M M M M	ow to arrive activity ratis surface wa	M M L at [check] the state of compone where t	eck]) the functiove (14I.i A, where nent 1-5 acroste	.); Factor C = P/P, S/I, and es Low	whether	.Factor A = a or or not the AA as previously we will be a specified by the	contains a defined, ar omponent <1 coderate No .4M	a surface acre Lo Yes	e or absent"
35% 14I. Gel Raeetlan ubsuisee ir	NA - no nents: Production Expo Level of Biological neral Fish Habitat Rating (14D.iii.) E/H M L N/A Ating (Working from d component in the frace outlet; the fina structions for furth High Yes No 1E 7H	Activity (syr E/H H H H H An top to botton AA; Factor la three rows er definitions ed component >5 Moderate Yes No .5M	m, use the r B = level of pertain to do of these ten acres Low Yes .5M	site. site. site. site. site. site. site. sidlife and idlife Hab M M M M M M M M M S S S S	ow to arrive activity ratis surface wa Veg High B No H 6M	M M L at [check] t ng from abc ter in the AA etated compon Modera Yes .7H .6M	eck]) the function ove (14I.i A, where nent 1-5 acroste No	.); Factor C = P/P, S/I, and es Low Yes No .5M .3L	whether T/E are H Yes8H	. Factor A = a or or not the AA as previously we will be a specific or not the AA as previously will be a specific or n	contains a defined, ar omponent <1 : oderate No .4M	a surface and A = "a acre Lo Yes .3L	e or absent"

i. Discharge Ind The AA is a slope we Springs or seeps are Vegetation growing d Wetland occurs at the Seeps are present at AA permanently flood Wetland contains an Shallow water table a Other: AA hydrolog	tland known or obsouring domant to toe of a natu the wetland en led during drow outlet, but no i and the site is s	season/dro ral slope dge ught periods inlet saturated to	the surface	Wetl: Strea Othe	neable substra and contains am is a knowr	ate present v	outlet	S Hying impeding ge volume decr		
iii. Rating (use the inform	nation from i a							d rating) HARGE OR WI	TH WATER	
				THAT IS	RECHARGING	THE GROU	NDWATER S	<u>YSTEM</u>		
Criteria Groundwater Discharge or R	echarge		P/P		S/I		T	No		
Insufficient Data/Information			1H		.7M	NA	.4M		IL	
omments: Ponding w			2014, but no			, IVA				l
4K. Uniqueness: Rating (working from to	AA contains or mature	s fen, bog, w e (>80 yr-old	varm springs	rive at [check] the functional points and AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by			AA doe	AA does not contain previously cited rare types or associations and structural diversity (#13) is		
Estimated relative abundance (#11)		1" by the M commo n		rare	the MTNHP common			low-moderate common	• • •	
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L	
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L	
High disturbance at AA (#12i)	.8H	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L	
14L. Recreation/Education i. Is the AA a known or put here and proceed to ii. Check categoric Other	otential rec./e o the overall s es that apply	ed. site: (che summary and to the AA:	eck) Y	N) nal/scientific	(if 'Yes' cont study; C	tinue with th	e evaluation	; if 'No' then cl		
iii. Rating (use the matrix Known or Potential Recreation			the functiona	il points and	rating)		<u> </u>	Known Pot	ential	
Public ownership or public e			c access (no pe	ermission req	uired)				.15H	
Private ownership with gener	ral public acces	ss (no permi	ssion required)					.15H	.1M	
Private or public ownership without general public access, or requiring permission for public access .1M .05L										
Comments: AA small, adjacent to hig	ghway, and v	with little to	no recreation	on or educa	ition potenti	al.				
General Site Notes										

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Forsyth NW - East

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	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	Н	.9	1	0.50	>
C. General Wildlife Habitat	М	.4	1	0.22	
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	L	.3	1	0.17	
G. Sediment/Nutrient/Toxicant Removal	М	.7	1	0.39	>
H. Sediment/Shoreline Stabilization	NA	0	0	0.00	
Production Export/Food Chain Support	М	.4	1	0.22	
J. Groundwater Discharge/Recharge	М	.7	1	0.39	V
K. Uniqueness	L	.2	1	0.11	
L. Recreation/Education Potential (bonus points)	L	.05	NA	0.03	
Totals:		3.65	8	2.04	
Percent of Possible Score			45.63 %		

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

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

I II III IV	
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Forsyth NW - East Wetland Mitigation Site - 2013 - 2020 Vegetation Species List

Scientific Names	Common Names	GP Indicator Status ^(a)
Agropyron cristatum	Crested Wheatgrass	UPL
Algae, green	Algae, green	UPL
Alisma triviale	Northern Water-Plantain	OBL
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FACW
Alopecurus pratensis	Field Meadow-Foxtail	FACW
Ambrosia psilostachya	Perennial Ragweed	FACU
Ammannia robusta	Grand Redstem	OBL
Artemisia frigida	Fringed Sage	UPL
Bassia scoparia	Mexican-Fireweed	FACU
Bromus arvensis	Japanese Brome	UPL
Bromus carinatus	California Brome	UPL
Bromus inermis	Smooth Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Chenopodium album	Lamb's-Quarters	FACU
Convolvulus arvensis	Field Bindweed	UPL
Descurainia sophia	Herb Sophia	UPL
Echinochloa crus-galli	Large Barnyard Grass	FAC
Eleocharis palustris	Common Spike-Rush	OBL
Elymus canadensis	Nodding Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FACU
Elymus sp.	Wild Rye	NA
Elymus trachycaulus	Slender Wild Rye	FACU
Euphorbia esula	Leafy Spurge	UPL
Filago arvensis	Field Fluffweed	UPL
Glyceria elata	Tall Manna Grass	OBL
Grindelia squarrosa	Curly-Cup Gumweed	UPL
Helianthus annuus	Common Sunflower	FACU
Hesperostipa comata	Needle-and-Thread	UPL
Hordeum jubatum	Fox-Tail Barley	FACW
Lactuca serriola	Prickly Lettuce	FAC
Lepidium perfoliatum	Clasping Pepperwort	FAC
Linum lewisii	Prairie Flax	UPL
Medicago sativa	Alfalfa	UPL
Melilotus officinalis	Yellow Sweet-Clover	FACU
Muhlenbergia asperifolia	Alkali Muhly	FACW
Pascopyrum smithii	Western-Wheat Grass	FACU
Poa compressa	Flat-stem Blue Grass	FACU
Poa pratensis	Kentucky Blue Grass	FACU
Polygonum aviculare	Yard Knotweed	FACU
Populus deltoides	Eastern Cottonwood	FAC
Puccinellia nuttalliana	Nuttall's Alkali Grass	OBL
Ratibida columnifera	Prairie Coneflower	UPL
Rumex acetosella	Common Sheep Sorrel	FAC
Rumex crispus	Curly Dock	FAC
Sagittaria cuneata	Arum-Leaf Arrowhead	OBL
Salix exigua	Narrow-Leaf Willow	FACW

Forsyth NW - East Wetland Mitigation Site - 2013 - 2020 Vegetation Species List

Scientific Names	Common Names	GP Indicator Status ^(a)
Salix fragilis	Fragile Willow	FAC
Schedonorous pratensis	Meadow False Rye Grass	FACU
Schoenoplectus maritimus	Saltmarsh Club-Rush	OBL
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Solanum rostratum	Buffalo Bur	UPL
Spartina pectinata	Freshwater Cord Grass	FACW
Tamarix chinensis	Salt-cedar	UPL
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Typha angustifolia	Narrow-Leaf Cat-Tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Veronica sp.	Speedwell	NA

⁽a) 2018 National Wetland Plant List (USACE 2018)

New species identified in 2020 are **bolded**.

APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Forsyth Northwest – West, Middle, and East Sites Rosebud County, Montana

Forsyth Northwest – West Site: Photo Point Photographs



Photo Point 1; Location: NE Corner of SE End; Bearing 270 degrees; Year 2013



Photo Point 1; Location: NE Corner of SE End; Bearing 270 degrees; Year 2020



Photo Point 2; Location: SW Corner of SE End; Bearing 350 degrees; Year 2013



Photo Point 2; Location: SW Corner of SE End; Bearing 350 degrees; Year 2020

Forsyth Northwest - West Site: Photo Point Photographs



Photo Point 3; Location: NE side near middle of site; Bearing 230 degrees; Year 2013



Photo Point 3; Location: NE side near middle of site; Bearing 230 degrees; Year 2020



Photo Point 4; Location: NE corner of NW end; Bearing 210 degrees; Year 2013



Photo Point 4; Location: NE corner of NW end; Bearing 210 degrees; Year 2020

Forsyth Northwest - West Site: Photo Point Photographs



Photo Point 5; Location: SW side near middle of site; Bearing 45 degrees; Year 2013



Photo Point 5; Location: SW side near middle of site; Bearing 45 degrees; Year 2020



Photo Point 6 Bearing: 300 degrees

Location: Center of new dike Year: 2017



Photo Point 6 Bearing: 120 degrees

Location: Center of new dike Year: 2017



Photo Point 6



Photo Point 6 Bearing: 120 degrees

Location: Center of new dike Year: 2020

Forsyth Northwest – West Site: Transect Photographs



Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2013



Transect 1: Start Bearing: 25 degrees

Location: SE end **Year:** 2020



Transect 1: End Bearing: 205 degrees

Location: SE end **Year:** 2013



Transect 1: End Bearing: 205 degrees



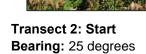
Transect 2: Start



Bearing: 25 degrees

Location: NW End Year: 2020

Location: SE end



Location: NW End Year: 2013

Forsyth Northwest – West Site: Transect and Data Point Photographs



Transect 2: End Bearing: 205 degrees

Location: Northwest End Year: 2013



Bearing: 205 degrees

Year: 2020



Data Point: DP01w Year: 2020

Location: NW part of site



Data Point: DP01u

Location: NW part of site

Forsyth Northwest – Middle: Photo Point and Transect Photographs



Photo Point: 1 Bearing: 120 degrees



Year: 2013



Photo Point: 1 Bearing: 120 degrees



Year: 2020



Photo Point: 2 Bearing: 300 degrees



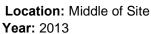
Location: Southeast end Year: 2013







Transect 1: Start Bearing: 205 degrees





Transect 1: Start Bearing: 205 degrees

Location: Middle of Site

Year: 2020

Forsyth Northwest – Middle: Transect and Data Point Photographs



Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2013



Data Point: DP01w Year: 2020

w **Location:** Middle of site



Transect 1: End Bearing: 25 degrees

Year: 2020

Location: Middle of Site

Data Point: DP01u

Year: 2020

Location: Middle of site

Forsyth Northwest - East Site: Photo Point Photographs



Photo Point: 1 Bearing: 125 degrees

Location: NW end of site Year 2013



Photo Point: 1 Location: NW end of site Bearing: 125 degrees Year: 2020



Photo Point: 3
Bearing: 305 degrees

Location: Southeast end of site **Year:** 2013



Photo Point: 3 Location: Southeast end of site Bearing: 305 degrees Year: 2020

Forsyth Northwest – East Site: Photo Point Photographs



Photo Point 2; Location: Near Center of Site; Bearing 210 degrees; Year 2013



Photo Point 2; Location: Near Center of Site; Bearing 210 degrees; Year 2020

Forsyth Northwest – East Site: Transect Photographs



Transect 1: Start Bearing: 145 degrees



Year: 2013



Transect 1: Start Bearing: 145 degrees



Location: Northwest End

Year: 2020



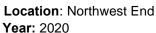
Transect 1: End Bearing: 325 degrees



Location: Northwest End Year: 2013



Transect 1: End Bearing: 325 degrees





Transect 2: Start Bearing: 280 degrees



Location: Southeast End

Year: 2013



Transect 2: Start Bearing: 280 degrees

Location: Southeast End

Year: 2020

Forsyth Northwest – East Site: Transect and Data Point Photographs



Transect 2: End Bearing:100 degrees

Location: Southeast End **Year:** 2013



Bearing: 100 degrees Year: 2020

Transect 2: End

Location: Northwest End



Data Point: DP01w

Location: Northwest end of site



Year: 2020



Data Point: DP01u Location: Northwest end of site



Data Point: DP02w Year: 2020

Location: Central part of site



Location: Central part of site Data Point: DP02u

Year: 2020