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: 2019

Years Monitored: 7th year of monitoring

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

Monitoring Conducted By: RESPEC/HDR for MDT Dates Monitoring Was Conducted: July 11, 2019

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 FNW project constructed in2012. 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 other sites continued in 2019. The results of the 2019 monitoring are presented in this report.

Site Location:

Latitude: 46.33927 Longitude: -106.876743 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: Weed Spraying Date: July 3, 2019 Specific recommendations for any additional corrective

actions: Weed treatment will continue in 2020.

Anticipated Wetland Credit Acres: 13.57

Wetland Credit Acres Generated to Date: 14.60

Previous Monitoring Reports:

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

Requirements (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 with positive indicators for wetland vegetation, soils, and hydrology. All of the sites are stable, have less than 5 percent total noxious weed cover, and are functioning as designed.

Summary Data: Combined West, Middle, and East Sites

7.12

7.53

Total

Wetland Delineation – The total wetland acreage delineated in 2019 at the three sites is 11.69 acres (see the delineation maps in Appendix A), which is the same acreage as 2018 but a 4.66-acre increase since 2017. 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 upland were delineated as wetland/open water in 2019. Wetland acreages for all three sites are provided in Table 1.

					•	,	
Wetland and Upland Habitats	2013 (acres)	2014 (acres)	2015 (acres)	2016 (acres)	2017 (acres)	2018 (acres)	2019 (acres)
FNW-West	5.44	5.85	6.01	6.01	5.89	10.55 ^(a)	10.55 ^(a)
FNW-Middle	0.49	0.49	0.49	0.49	0.58	0.58	0.58
FNW-East	1.19	1.19	0.46	0.43	0.43	0.56	0.56

Table 1. Wetland Habitat Acreages Delineated at the FNW Sites (2013–2019)

6.93

6.96

Functional Assessment – The 2019 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 of the sites rate as Category III wetlands and have generated 73.79 Functional Units. Functional Assessment ratings have remained relatively consistent at the three sites since monitoring began in 2013.

Table 2. 2019 Montana Wetland Assessment Method Summary for the Forsyth Northwest Sites

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)	Mod (0.6)	Low (0.3)
Sediment/Nutrient/Toxicant Removal	Mod (0.7)	High (0.8)	High (1.0)
Sediment/Shoreline Stabilization	Mod (0.6)	Mod (0.6)	Mod (0.6)
Production Export/Food Chain Support	Mod (0.7)	Low (0.3)	Low (0.3)
Groundwater Discharge/Recharge	Mod (0.7)	N/A	Mod (0.7)
Uniqueness	Mod (0.5)	Low (0.2)	Low (0.2)
Recreation/Education Potential (bonus points)	High (0.15)	N/A	N/A
Actual Points/Possible Points	6.45/11	3.8/9	4.4/9
% of Possible Score Achieved	59.0%	42.2%	48.9%
Overall Category	III	III	III
Total Acreage of Assessed Wetlands Within Site Boundaries	10.55	0.58	0.56
Functional Units (acreage × actual points)	68.09	2.2	2.5

⁽a) Created wetland acreage includes 6.72 acres of open water that is slowly developing submerged and emergent wetland plant communities.

Photographs – Photographs were taken at photo points, transect endpoints, and data points at all three FNW sites in 2019 and are provided in Appendix C with comparisons between 2019 and the first year of monitoring. Please refer to previous years' monitoring reports for all previous annual photographs (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 2019 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 2019 because the surveys were completed in the middle of the day and the sites are relatively small and not diverse. Nine bird species were recorded at the FNW-West site during the field investigation along with deer tracks and one northern leopard frog (*Lithobates pipiens*).

Summary Data: Specific to the FNW-West Site

FNW-West Site Vegetation — A total of 79 plant species were identified on the site from 2013 through 2019. No new species were identified at the site in 2019 (see the plant list in Appendix B). Vegetation plant 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. Wetland Type 17 — Open Water/Aquatic Macrophytes replaced a number of wetland and upland communities across the site. Mature cottonwood trees and willows toward the center of the site have also shown signs of stress from the flooding during the last two monitoring events and will likely die if flooding behind the dike continues into the future. The following vegetation community types were identified in 2019:

- 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 9 *Eleocharis palustris*/Open Water
- Wetland Type 16 Alopecurus arundinaceus/Hordeum jubatum
- Wetland Type 17 Open Water/Aquatic Macrophytes.

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).

Vegetation cover was measured along two transects in 2019 (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 5 and wetland community Type 17; 95 percent of the transect crossed open water habitat in 2019 and is a result of ponding across the site that resulted from 2017 adaptive management activities at the site. Total vegetative cover has remained constant at 5 percent since the dike was reconstructed.

Table 3. Data Summary for T-1 From 2016 Through 2019 at the FNW-West Site

Monitoring Year		2017	2018	2019
Transect Length (feet)		282	282	282
Vegetation Community Transitions Along Transect	7	5	1	1
Vegetation Communities Along Transect	5	5	1	1
Hydrophytic Vegetation Communities Along Transect	4	2	0	1
Total Vegetative Species	26	18	5	4
Total Hydrophytic Species	5	4	0	1
Total Upland Species	21	14	5	4
Estimated % Total Vegetative Cover	90	46	5	10
Estimated % Unvegetated	10	54	95	65
% Transect Length Comprising Hydrophytic Vegetation Communities	37	34	0	30
% Transect Length Comprising Upland Vegetation Communities	63	66	5	5
% Transect Length Comprising Unvegetated Open Water	0	0	95	65
% Transect Length Comprising of Mudflat	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, and wetland community Type 9; 90 percent of the transect crossed wetland habitat in 2019. Total vegetative cover decreased in 2018 and 2019 to 20 percent because water levels increased across the site after dike repair in 2017.

Table 4. Data Summary for T-2 From 2016 Through 2019 at the FNW-West Site

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

Infestations of two Priority 2B noxious weeds (Canada thistle [Cirsium arvense] and leafy spurge [Euphorbia esula]) were mapped at the site in 2018 but were not observed in 2019. Ongoing weed-spraying efforts and elevated water levels across the site have essentially eradicated noxious weeds from the site in the last 2 years.

FNW-West Site Hydrology – The main source of hydrology at the FNW-West site is runoff from precipitation events in the East Spring Coulee 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. In both 2018 and 2019, the mitigation site received heavy runoff from Porcupine Creek and East Spring Coulee and filled the mitigation site with water to full capacity. Since 2013 (when monitoring began), 2019 was only the second year that this site has been completely flooded during the monitoring event. The dike and overflow structure that were repaired in 2016 appeared to be in good condition and functioning as designed.

FNW-West Site Soils – Soil test pits were excavated at two locations, and both locations were within what was originally mapped as the Marvan silty clay soil series (DP-1W and DP-1U; Figure A-2, Appendix A and USACE data forms, Appendix B). DP-1W is located on the edge of the wetland depression. The soil profile revealed a 10YR 5/1 clay loam from 0 to 20 inches with 10 percent prominent 10YR 5/6 mottles. This soil qualifies as a Hydric Soil Indicator (F3) Depleted Matrix. DP-1U is located in upland community Type 5 – Symphoricarpos albus/Pascopyrum smithii. The soil profile revealed a brown (10YR 3/2) clay loam and did not meet the criteria for any hydric soil indicators. Because of the extensive surface water at the site in 2018 and 2019, the matched data point location was moved to the west side of the depression as the original location for DP-1W was under 2 feet of water.

Summary Data: Specific to FNW-Middle Site

FNW-Middle Site Vegetation – A total of 57 plant species were identified on the site from 2013 through 2019. No new species were identified at the site in 2019 (see the plant list in Appendix B). Vegetation plant communities were identified by plant composition and dominance. The following vegetation community types were identified in 2019:

- Upland Type 3 Pascopyrum smithii/Elymus canadensis
- Wetland Type 4 Puccinellia nuttalliana/Hordeum jubatum.

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). Vegetation cover was measured along one transect in 2019 (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 Type4; 38 percent of the transect crossed wetland habitat in 2019. Total vegetative cover has remained constant at 85 percent from 2016 to 2019. Infestations of two Priority 2B noxious weeds were identified at the site in 2019: salt-cedar and Canada thistle (Figure A-6, Appendix A).

Table 5. Data Summary for T-1 From 2016 Through 2019 at the FNW-Middle Site

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

FNW-Middle Site Hydrology – This site is situated near abandoned meander bends associated with Big Porcupine Creek that exhibit wetland characteristics. 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 exhibited signs of inundation that persisted for an extended period before the field survey. Positive hydrologic indicators that were observed at this site included surface soil cracks, and geomorphic position. The site was not inundated at the time of the 2019 field survey.

FNW-Middle Site Soils — Soil test pits were examined at two locations, and both locations were within what was originally mapped as the Harlem silty clay soil series (DP-1W and DP-1U; Figure A-5, Appendix A and USACE data forms, Appendix B). DP-1W is located in an excavated depression near the center of the site. The soil profile revealed a dark olive-brown (2.5Y 3/2) clay loam from 0 to 2 inches with a dark gray (10YR 4/1) clay loam from 2 to 20 inches that had faint (10YR 5/8) mottles. This soil qualifies as a Hydric Soil Indicator (F3) Depleted Matrix. DP-1U is located in upland community Type 3 — Pascopyrum smithii/Elymus canadensis, approximately 10 feet northeast of DP-1W. The soil profile revealed a dark olive-brown (2.5Y 3/2) clay loam and did not meet the criteria for any hydric soil indicators.

Summary Data: Specific to FNW-East Site

FNW-East Site Vegetation – A total of 70 plant species were identified on the site from 2013 through 2019. No new species were identified at the site in 2019 (see the plant list in Appendix B). Vegetation plant communities were identified by plant composition and dominance. The following vegetation community types were identified in 2019:

- 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). Vegetation cover was measured along two transects in 2019 (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 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 2016 to 2019.

Table 6. Data Summary for T-1 From 2016 Through 2019 at the FNW-East Site

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

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 2019. Total vegetative cover has remained constant at 98percent from 2017 to 2019.

Table 7. Data Summary for T-2 From 2016 Through 2019 at the FNW-East Site

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

Infestations of two Priority 2B noxious weed (salt-cedar) and field bindweed 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 in the area appear to be providing natural regeneration of cottonwoods and willows; seedlings of both genera were documented within the wetland community.

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 relic and contemporary wetland characteristics are located directly adjacent to the site. Positive hydrologic indicators that were observed at this site included surface soil cracks and geomorphic position.

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 (DP-1W, DP-1U, DP-2W, and DP-2U; Figure A-8, Appendix A and USACE data forms, Appendix B). DP-1W is located in the western edge of the wetland depression within an area that met the wetland criteria. The soil profile revealed a dark grayish-brown (2.5Y 3/2) clay loam with very dark grayish-brown (2.5 Y 4/4) redoximorphic concentrations along pore linings. The soil met the criteria for redox dark surface (F6) and classification as a hydric soil. DP-1U is located approximately 10 feet northwest of DP-1W on the side slope of the excavated basin in the adjacent uplands. The soil profile revealed a dark olive-brown (2.5Y 3/3) clay loam and did not meet the criteria for any hydric soil indicators. DP-2W is located in the eastern edge of the wetland depression within an area that met the wetland criteria. The soil profile revealed a 2.5YR 4/2 clay loam with bright 10YR 5/8 redoximorphic concentrations along pore linings. The soil met the criteria for depleted matrix (F3) and classification as a hydric soil.

Credit Summary — Table 8 summarizes the estimated wetland credits at all three sites based on the USACE-approved credit ratios and the wetland delineation completed in July 2019. 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. The site has generated an excess of 1.82 credit acres to offset losses from these two construction projects.

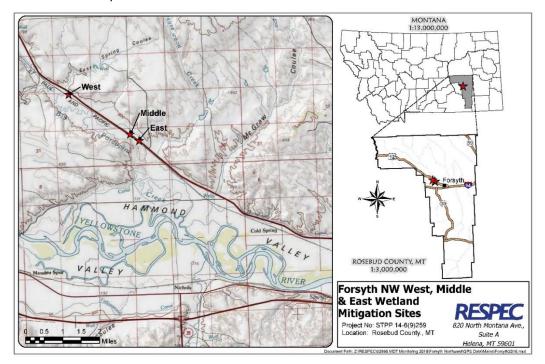
Table 8. Credit/Debit Summary for the Forsyth - Northwest Project

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
	9.26	Creation Credit	1:1	9.26
Site 1: West	1.29	Preservation Credit	4:1	0.32
West	3.16	Upland Buffer Credit	5:1	0.63
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	Total 24.14 Total Credits			14.60
Net Credits			1.82	

8

Maps, Plans, Photos

Site Location Map



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 2018 Monitoring Report

https://www.mdt.mt.gov/other/webdata/external/planning/wetlands/2018-REPORTS/2018-FINAL-Rostad-Ranch.PDF

Conclusions

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, have less than 5 percent total noxious weed cover, and are functioning as designed. To date, the sites have developed enough mitigation credits to satisfy the required 12.78 acres of wetland debits (Table 8) and generated an additional 1.82 credit acres at the sites.

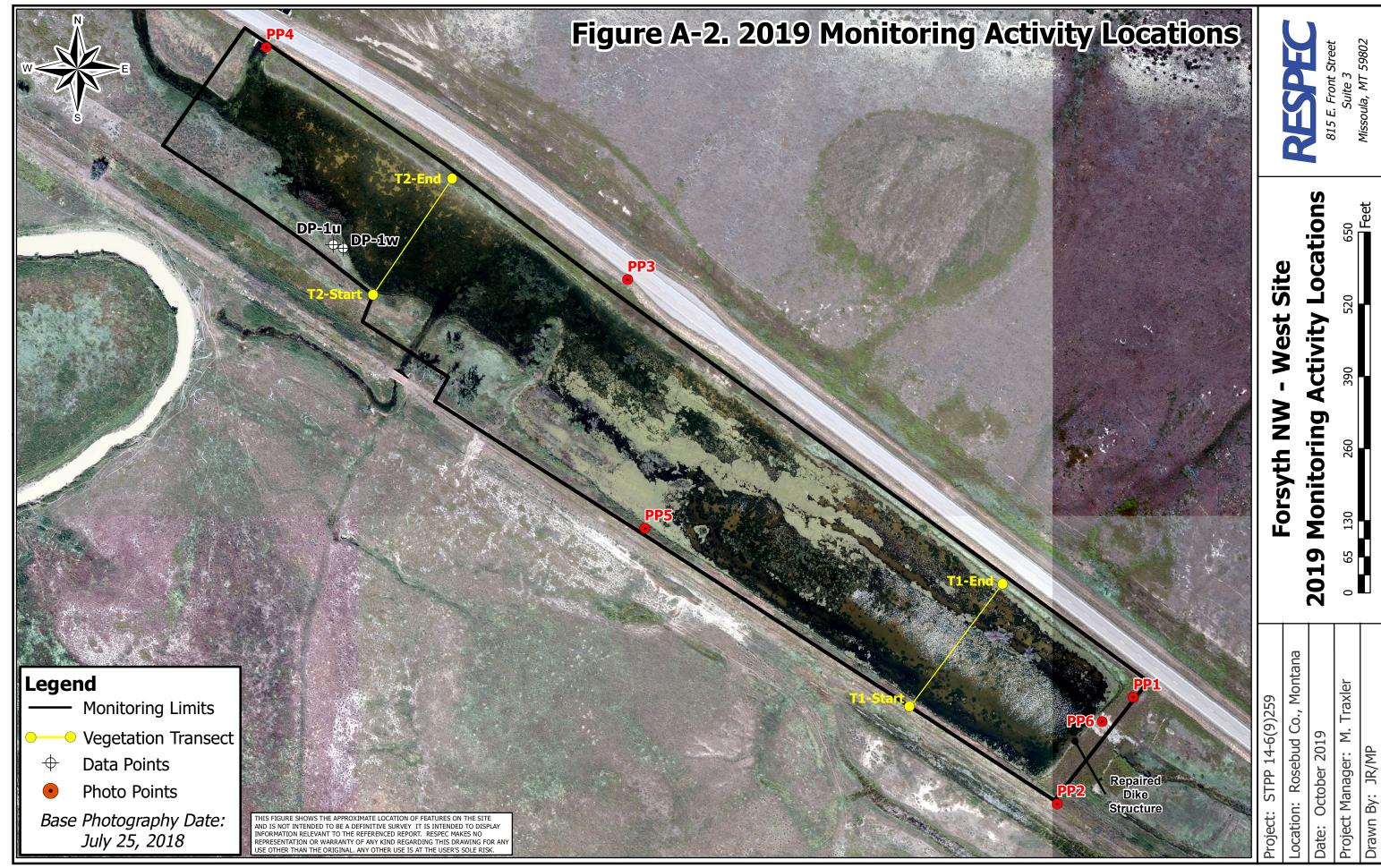
References

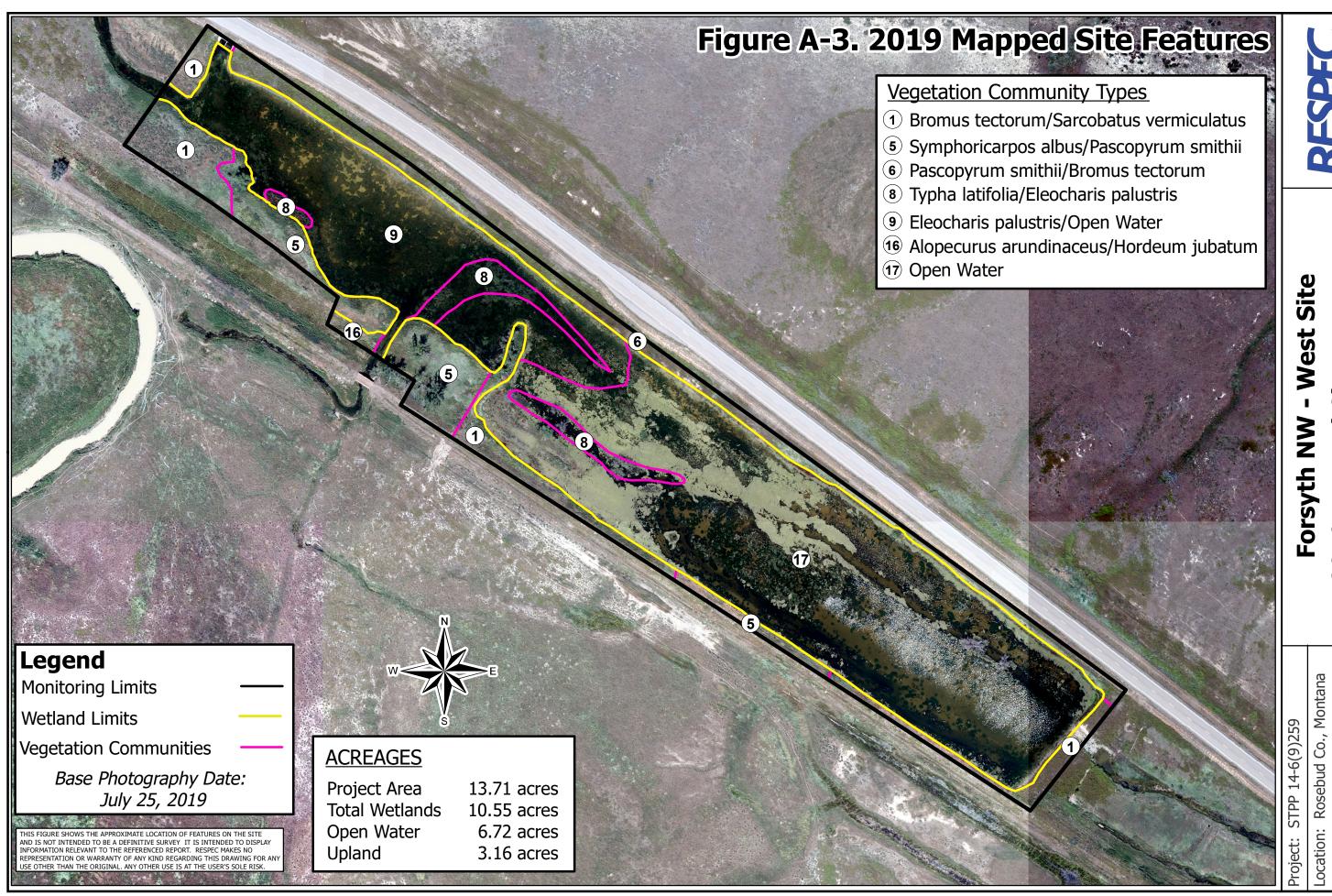
US Army Corps of Engineers, 2005. "Montana Mitigation Information," *army.mil*, retrieved October 10, 2016, from http://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/Mitigation

APPENDIX A PROJECT AREA MAPS

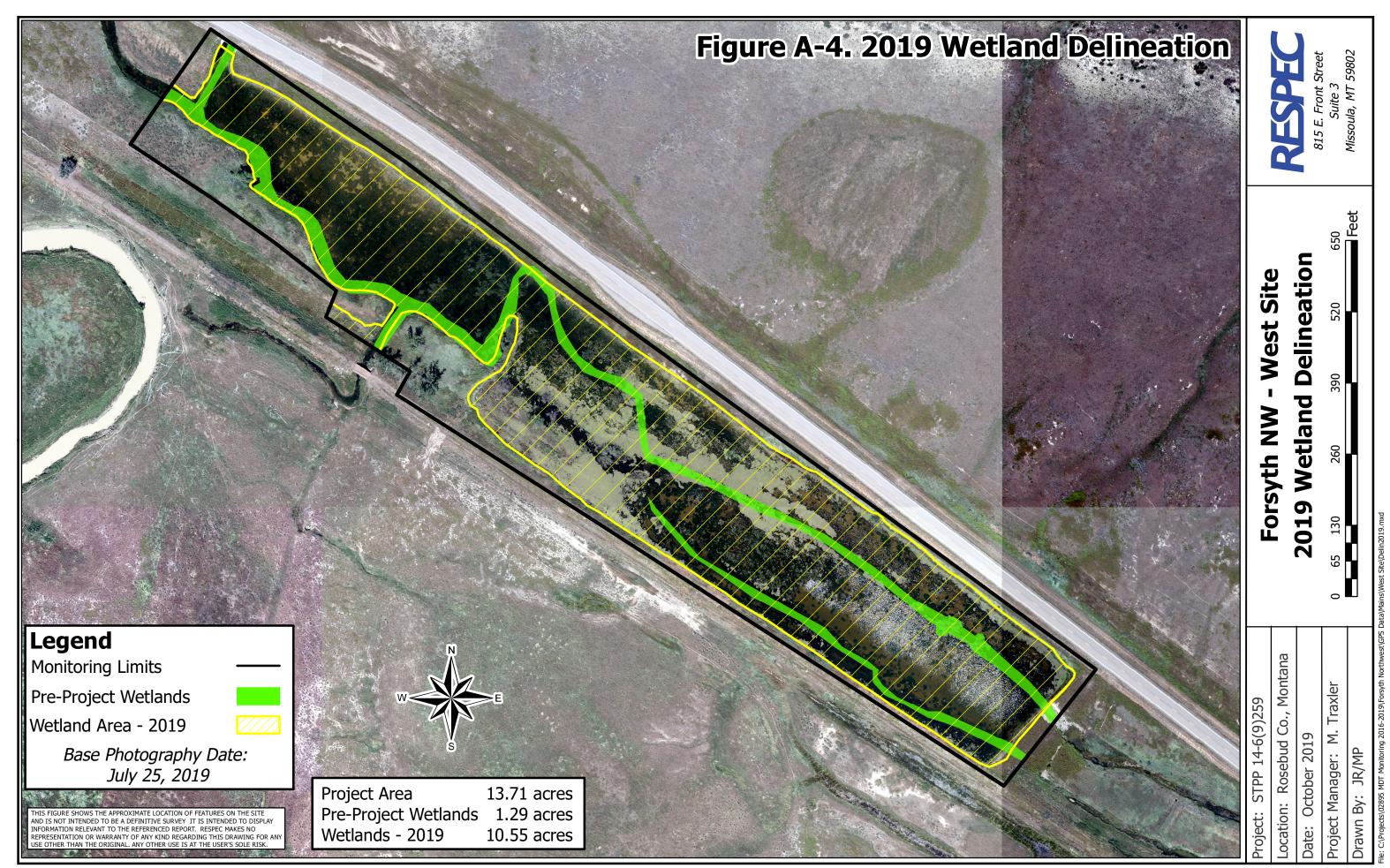
MDT Wetland Mitigation Monitoring Forsyth Northwest – West, Middle, and East Sites Rosebud County, Montana

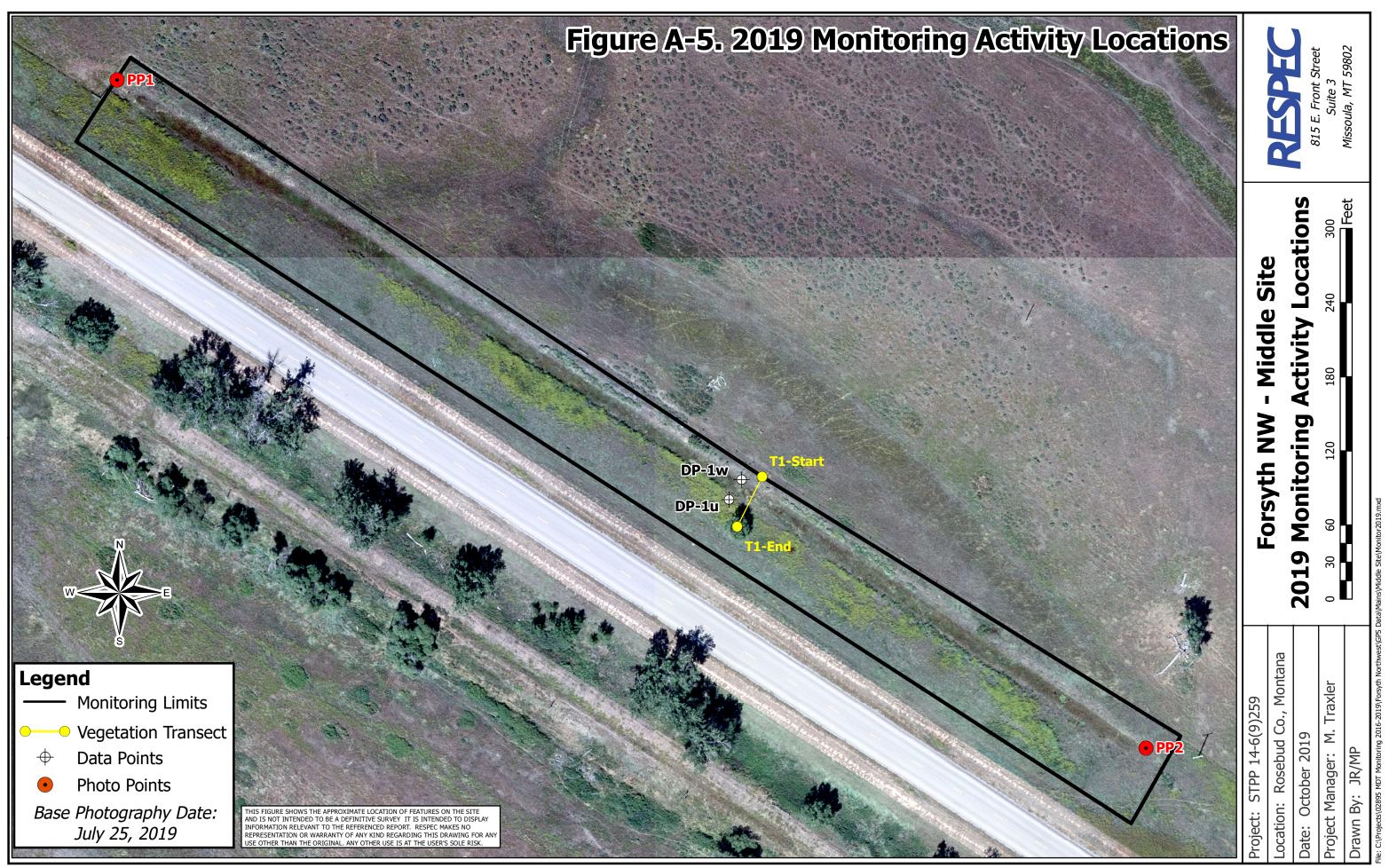
A-1 RSI-2978

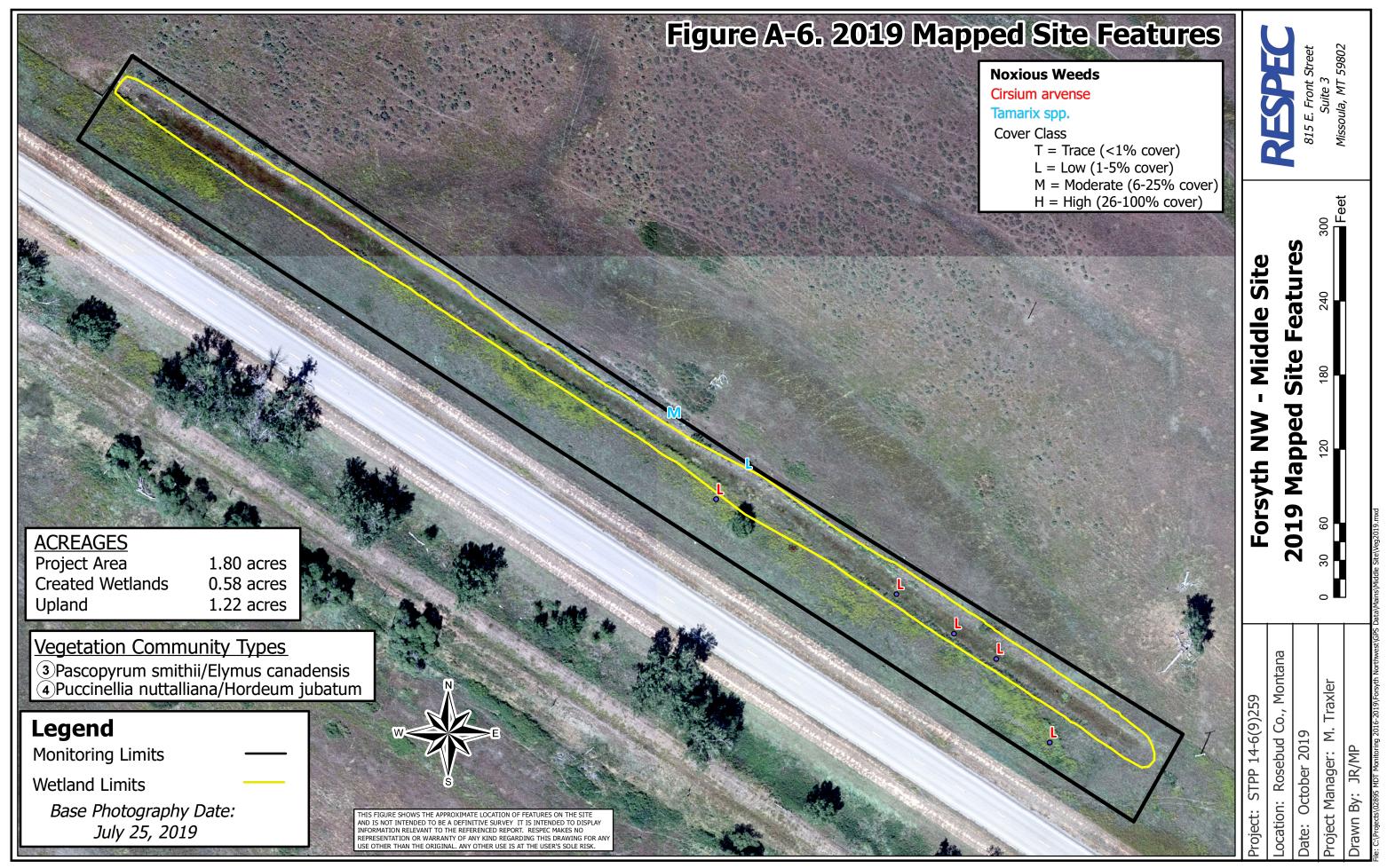


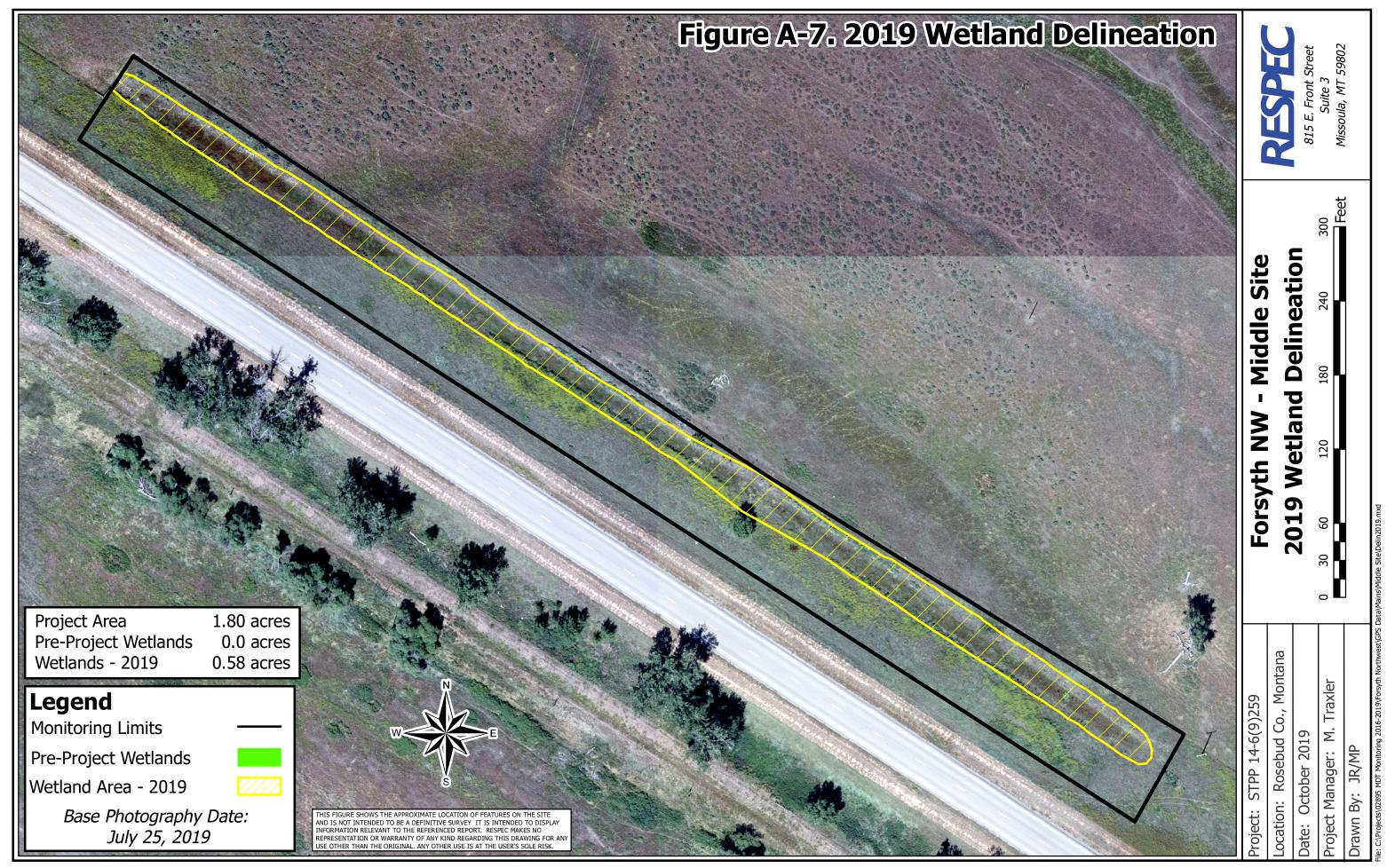


2019 Mapped Site Features

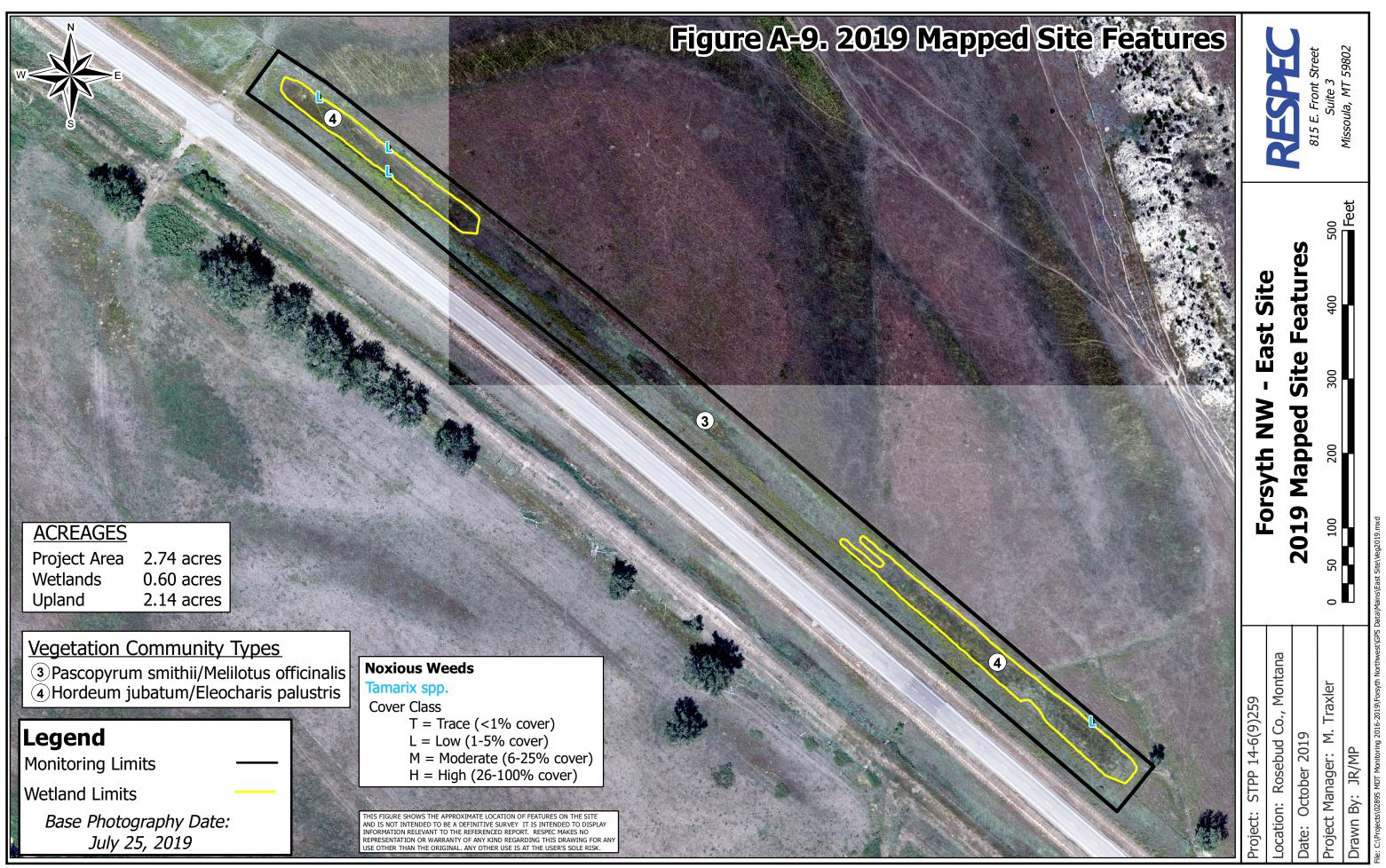














APPENDIX B MONITORING FORMS

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

B-1 RSI-2978

RESPEC/MDT WETLAND MITIGATION SITE MONITORING FORM

Project Name: Forsyth NW - West Assessment Date: July 11, 2019 Traxler Location: ~15 miles NW of Forsyth Milepost: RP 280 on US 12 Legal Description: T 7N R 39E Weather Conditions: sunny, 90 degrees, Initial Evaluation Date: August 15, 2013 Size of evaluation area: 13.71 acres	Section <u>20 &</u> breezy Monit	Time of I toring Year: 7 # rounding wetland:	ment: M. T. Glendive Day: 2:00 P Visits in Ye	<u>M</u> ear: <u>1</u>	
Surface Water Source: Periodic flooding from Big Porcupine Creek, surface runoff from East Spring Coulee, and seasonal high groundwater Inundation: Present Average Depth: 1 feet Range of Depths: 0.5-3.5 ft Percent of assessment area under inundation: 80% Depth at emergent vegetation-open water boundary: 2 feet 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.): Entire wetland area inundated in 2019. Groundwater Monitoring Wells: Absent					
Record depth of water below ground surface Well Number Depth Well Number Depth Well Number Depth Well Number Depth Depth Well Number Depth Depth		Well Number	Depth	1	
			•		
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. COMMENTS / PROBLEMS: Mitigation area receives surface water when East Spring Creek Coulee produces surface flow and from periodic flooding of Big Porcupine Creek with potential for high water velocities through					
constructed wetland. The entire site wa water year.					

VEGETATION COMMUNITIES

Community Number: **1** Community Title (main spp): **Bromus tectorum / Sacobatus vermiculatus**

Dominant Species	% Cover	Dominant Species	% Cover
Bromus tectorum	2 = 6-10%	Elymus repens	1 = 1-5%
Pascopyrum smithii	3 = 11-20%	Euphorbia esula	1 = 1-5%
Sarcobatus vermiculatus	2 = 6-10%	Thalspi arvense	1 = 1-5%
Schedonorus pratensis	2 = 6-10%	Bassia scoparia	1 = 1-5%
Bare Ground	1 = 1-5%	Chenopodium album	1 = 1-5%
Bromus inermis	1 = 1-5%	Hordeum jubatum	1 = 1-5%

Comments / Problems: _____

Community Number: 5 Community Title (main spp): Symphoricarpos albus / Pascopyrum smithii

Dominant Species	% Cover	Dominant Species	% Cover
Pascopyrum smithii	5 = > 50%	Hordeum jubatum	1 = 1-5%
Symphoricarpos albus	2 = 6-10%	Chenopodium album	1 = 1-5%
Bassia scoparia	1 = 1-5%	Poa pratensis	3 = 11-20%
Bromus japonicus	1 = 1-5%	Sarcobatus vermiculatus	3 = 11-20%
Cirsium arvense	+=<1%	Thlaspi arvense	2 = 6-10%
Poa compressa	2 = 6-10%	Bromus inermis	1 = 1-5%

Comments / Problems: _____

Community Number: 6 Community Title (main spp): Pascopyrum smithii / Bromus tectorum

Dominant Species	% Cover	Dominant Species	% Cover
Bromus tectorum		Elymus trachycaulus	1 = 1-5%
Pascopyrum smithii	5 = > 50%	Lepidium perfoliatum	2 = 6-10%
Bromus japonicus	1 = 1-5%	Hordeum jubatum	1 = 1-5%
Melilotus officinalis	3 = 11-20%	Linum lewisii	1 = 1-5%
Bassia scoparia	2 = 6-10%	Thlaspi arvense	+ = < 1%
Elymus canadensis	1 = 1-5%	Hordeum marinum	+ = < 1%

Comments / Problems: _____

Community Number: 7 Community Title (main spp): Puccinellia nuttalliana / Hordeum jubatum

Dominant Species	% Cover	Dominant Species	% Cover	
Open Water	5 = > 50%	Schedonorus pratensis	+ = < 1%	
Hordeum jubatum	+=<1%	+ = < 1% Bare Ground		
Puccinellia nuttalliana	+ = < 1%	Elymus repens		
Bassia scoparia	+=<1%	Glycyrrhiza lepidota	+=<1%	
Grindelia squarrosa	+=<1%	Helianthus annuus	+=<1%	
Lactuca serriola	+=<1%	Pascopyrum smithii	+ = < 1%	

Comments / Problems: <u>Entire community under standing water in 2019. All vegetation dead. 2017 species left in table for reference purposes.</u>

VEGETATION COMMUNITIES (continued)

Community Number: **8** Community Title (main spp): **Typha latifolia / Elocharis palustris**

Dominant Species	% Cover	Dominant Species	% Cover
Eleocharis palustris	5 = > 50%		
Typha latifolia	3 = 11-20%		
Schoenoplectus acutus	+ = < 1%		
Typha angustifolia	2 = 6-10%		
Salix amygdaloides	1 = 1-5%		
Spartina pectinata	1 = 1-5%		

Comments / Problems: <u>Populus deltoides (2ft tall)-<1%; Schoenoplectus maritimus-1; Sonchus arvensis-<1</u>

Community Number: 9 Community Title (main spp): Eleocharis palustris / Open Water

Dominant Species	% Cover	Dominant Species	% Cover
Open Water	5 = > 50%		
Eleocharis palustris	3 = 11-20%		
Typha latifolia	1 = 1-5%		
Schoenoplectus maritimus	3 = 11-20%		
Polygonum aviculare	+ = < 1%		
Populus deltoides	+=<1%		

Comments / Problems: _____

Community Number: 11 Community Title (main spp): Pascopyrum smithii/Elymus repens

Dominant Species	% Cover	Dominant Species	% Cover
Open Water	5 = > 50%	Lactuca serriola	+ = < 1%
Pascopyrum smithii	+=<1%	Populus deltoides	+ = < 1%
Schedonorus pratensis	+=<1%	Tragopogon dubius	+=<1%
Chenopodium album	+=<1%	Bromus tectorum	+=<1%
Elymus repens	+=<1%	Spartina pectinata	+=<1%
Grindelia squarrosa	+=<1%	Glycyrrhiza lepidota	+=<1%

Comments / Problems: <u>Entire community under standing water in 2019. All vegetation dead. 2017 species left in table for reference purposes.</u>

Community Number: 12 Community Title (main spp): Hordeum jubatum/Elymus trachycaulus

Dominant Species	% Cover	Dominant Species	% Cover
Open Water	5 = > 50%	Muhlenbergia asperifolia	+ = < 1%
Elymus repens	+=<1%		
Glycyrrhiza lepidota	+ = < 1%		
Hordeum jubatum	+=<1%		
Elymus trachycaulus	+=<1%		
Grindelia squarrosa	+=<1%		

Comments / Problems: <u>Entire community under standing water in 2019. All vegetation dead. 2017 species left in table for reference purposes.</u>

VEGETATION COMMUNITIES (continued)

Community Number: 13 Community Title (main spp): Elymus trachycaulus/Bromus tectorum

Dominant Species	% Cover	Dominant Species	% Cover
Open Water	5 = > 50%	Euphorbia esula	+ = < 1%
Poa pratensis	+=<1%	Eymus lanceolatus	
Populus deltoides	+=<1%	Elymus repens	
Bromus tectorum	+=<1%	Puccinellia nuttalliana	
Elymus trachycaulus	+=<1%		
Tragopogon dubius	+=<1%		

Comments / Problems: <u>Entire community under standing water in 2019. All vegetation dead. 2017 species left in table for reference purposes.</u>

Community Number: 14 Community Title (main spp): Pascopyrum smithii/Elymus lanceolatus

	` 1		
Dominant Species	Dominant Species % Cover		% Cover
Open Water	5 = > 50%	Ribes cereum	+ = < 1%
Bromus tectorum	+ = < 1%	Pascopyrum smithii	+ = < 1%
Elymus lanceolatus	+=<1%		
Symphoriocarpos albus	+ = < 1%		
Elymus trachycaulus	+=<1%		
Linum lewisii	+=<1%		

Comments / Problems: <u>Entire community under standing water in 2019. All vegetation dead. 2017 species left in table for reference purposes.</u>

Community Number: 16 Community Title (main spp): Alopecurus arundinaceus/Hordeum jubatum

Dominant Species	% Cover	Dominant Species	% Cover
Alopecurus arundinaceus	4 = 21-50%		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Hordeum jubatum	4 = 21-50%		
Sagittaria cuneata	3 = 11-20%		
Rumex crispus	3 = 11-20%		
Bare Ground	3 = 11-20%		

Comments / Problems:

Community Number: 17 Community Title (main spp): Open Water/Aquatic Macrophytes

Dominant Species	% Cover	Dominant Species	% Cover
Open Water	5 = > 50%		
Typha latifolia	+=<1%		
Eleocharis palustris	+ = < 1%		
Schoenoplectus maritimus	+=<1%		
Aquatic Macrophytes	3 = 11-20%		

Comments / Problems: Nearly the entire SE half of the wetland was under open water at time of survey.

Additional Activities Checklist:

Record and map vegetative communities on aerial photograph.

PLANTED WOODY VEGETATION SURVIVAL

Plant Species	Number Originally Planted	Number Observed	Mortality Causes

Comments / Problems:	No woody	vegetation p	<u>lanted at si</u> t	<u>e. Natura</u>	<u>l recruitmen</u>	<u>it of cot</u>	<u>tonwoods</u>
and willows is occurring	<u>5.</u>						

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW -	<u>West</u> Date	: <u>July 11, 2019</u>	Examiner: M.	<u> Traxler, T. Traxler</u>	
Transect Number: 1	Approximat	e Transect Lengt	th: 282 feet	Compass Direction from Start: 25	° Note:

Transect Interval Length: 14 feet (station 0-14)	
Vegetation Community Type: 5: Symphoriocarpos albus/Pasco	pyum smithii
Plant Species	Cover
Bromus tectorum	5 = > 50%
Poa pratensis	2 = 6-10%
Pascopyrum smithii	2 = 6-10%
Lepidium perfoliatum	1 = 1-5%
Bare Ground	2 = 6-10%
Total Vegetative Cover:	95%

Transect Interval Length: 268 feet (station 14-282)	
Vegetation Community Type: 17: Open Water/Aquatic	Macrophytes
Plant Species	Cover
Open Water	5 = > 50%
Dead Vegetation	+=<1%
Aquatic Macrophytes	2 = 6-10%
Total Vegetative Cover	:: 10%

Transect Interval Length:	
Vegetation Community Type:	
Plant Species	Cover
Total Vegetative Cover:	
C	

Transect Interval Length:	
Vegetation Community Type:	
Plant Species	Cover
Total Vegetative Cover:	

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW - West Date: July 11, 2019 Examiner: M. Traxler, T. Traxler

Transect Number: 2 Approximate Transect Length: 261 feet Compass Direction from Start: 25° Note:

Transect Interval Length: 7 feet (station 0-7)	
Vegetation Community Type: 5: Symphoricarpos albus / Pasco	pyrum smithii
Plant Species	Cover
Symphoricarpos albus	+ = < 1%
Elymus repens	4 = 21-50%
Lepidium perfoliatum	3 = 11-20%
Poa compressa	4 = 21-50%
Thlapsi arvensis	1 = 1-5%
Pascopyrum smithii	1 = 1-5%
Bare Ground	1 = 1-5%
Cirsium arvense	+ = < 1%
Total Vegetative Cover:	95%

Transect Interval Length: 235 feet (station 7-242)			
Vegetation Community Type: 9: Eleocharis palustris / Op	Vegetation Community Type: 9: Eleocharis palustris / Open Water		
Plant Species	Cover		
Eleocharis palustris	1 = 1-5%		
Schoenoplectus maritimus	1 = 1-5%		
Open Water	5 = > 50%		
Typha latifolia	1 = 1-5%		
Total Vegetative Cover:	5%		

Transect Interval Length: 19 feet (station 242-261)		
Vegetation Community Type: 6: Pascopyrum smithii / Bromus tectorum		
Plant Species	Cover	
Elymus lanceoatus	1 = 1-5%	
Bromus arvensis	1 = 1-5%	
Bare Ground	1 = 1-5%	
Melilotus officinale	5 = > 50%	
Lepidium perfoliatum	1 = 1-5%	
Pascopyrum smithii	3 = 11-20%	
Bassia scoparia	1 = 1-5%	
Hordeum jubatum	1 = 1-5%	
Total Vegetative Cover:	95%	

Transect Interval Length:		
Vegetation Community Type:		
Plant Species	Cover	
Total Vegetative Cover:	%	

MDT WETLAND MONITORING - VEGETATION TRANSECT

Cover EstimateIndicator ClassSource+ = < 1%3 = 11-10%+ = ObligateP = Planted1 = 1-5%4 = 21-50%- = Facultative/WetV = Volunteer2 = 6-10%5 = > 50%0 = Facultative

Percent of perimeter developing wetland vegetation (excluding dam/berm structures): ____%

Establish transects perpendicular to the shoreline (or saturated perimeter). The transect should begin in the upland area. Permanently mark this location with a standard metal fencepost. Extend the imaginary transect line towards the center of the wetland, ending at the 3 foot depth (in open water), or at the point where water depths or saturation are maximized. Mark this location with another metal fencepost.

Estimate cover within a 10 foot wide "belt" along the transect length. At a minimum, establish a transect at the windward and leeward sides of the wetland. Remember that the purpose of this sampling is to monitor, not inventory, representative portions of the wetland site.

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 dire	ections surrounding the	e wetland.
At least one photograph showing upland use surr	ounding the wetland.	If more than one upland
exists then take additional photographs.		
At least one photograph showing the buffer surro	unding the wetland.	

	1 0 1		\mathcal{C}	
\boxtimes	One photograph from	each end of the	vegetation transect,	showing the transect.

Location	Photograph Frame #	Photograph Description & Lat/Long	Compass Reading (°)
PP-1		Photo Point 1 (Pano): 46.336914 / -106.871132	270
PP-2		Photo Point 2 (Pano): 46.336468 / -106.871811	350
PP-3		Photo Point 3 (Pano): 46.339088 / -106.874611	230
PP-4		Photo Point 4 (Pano): 46.340237 / -106.877312	210
PP-5		Photo Point 5 (Pano): 46.337817 / -106.874587	45
PP-6		Completed Dike: 46.3368 / -106.8714	300
PP-6a		Completed Dike: 46.3368 / -106.8714	120
T-1 start		Transect 1 start: 46.33691 / -106.872772	25
T-1 end		Transect 1 end: 46.337456 / -106.872063	205
T-2 start		Transect 2 start: 46.339001 / -106.87645	25
T-2 end		Transect 2 end: 46.339561 / -106.875854	205
DP-1W		Wetland soil pit: 46.33925 / -106.876672	
DP-1U		Upland soil pit: 46.33927 / -106.876743	

Comments / P	roblems:
--------------	----------

GPS SURVEYING

Using a resource grade GPS survey the items on the checklist below. Collect at least 3 location points set at a 5 second recording rate. Record file numbers for site in designated GPS field notebook.

GPS Checklist:
 Upland/wetland boundary. 4-6 landmarks that are recognizable on the aerial photograph.
Start and End points of vegetation transect(s).
Photograph reference points.
Groundwater monitoring well locations.
Bird nest boxes.
Comments / Problems:
WETLAND DELINEATION
(attach COE delineation forms)
At each site conduct these checklist items: Delineate wetlands according to the 1987 Army COE manual and regional supplement.
Delineate wetland – upland boundary onto aerial photograph.
Comments / Problems:
FUNCTIONAL ASSESSMENT
Complete and attach full MDT Montana Wetland Assessment Method field forms.
Comments / Problems:
MAINTENANCE
Were man-made nesting structure installed at this site? NA
If yes, do they need to be repaired? <u>NA</u>
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? Yes
If yes, are the structures working properly and in good working order? Yes
If no, describe the problems below.
Comments / Problems: 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
and 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.

	V	VILDLIF	E		
Birds					
Were man-made nesting structures If yes, type of structure: Ho Are the nesting structures being use Do the nesting structures need repa	w many? <u>0</u> ed? <u>NA</u>	<u> </u>			
Mammals and Herptiles					
Mammal and Herptile Species	Number Observed	Tracks	Indir Scat	ect Indication (Burrows	of Use Other
Deer sp.					3 32232
Northern Leopard Frog	1				
Additional Activities Checklist: NA Macroinvertebrate Sampling (i Comments / Problems:	if required)				

BIRD SURVEY - FIELD DATA SHEET

Site: Forsyth NW - West Date: 7/11/19

Survey Time: <u>2:00</u> pm to <u>3:15</u> pm

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
Red-winged Blackbird	4	F FO	UP OW				
Western Meadowlark	1	FO L	UP				
Cliff Swallow	6	FO F	OW UP				
Yellow-headed Blackbird	4	F FO	OW UP				
Common Nighthawk	1	FO	UP OW				
Killdeer	2	FO	UP OW				
Duck sp.	6	FL	OW				
Wilson's Phalarope	2	BP FO	OW SS UP				
Brewer's Blackbird	2	FO	UP OW				

	BEHA	AVIOR	CODES
--	------	-------	-------

BP = One of a breeding pair **BD** = Breeding display

F = ForagingFO = FlyoverL = LoafingN = Nesting

Weather: **90 degrees, sunny**

HABITAT CODES

AB = Aquatic bed
FO = Forested
I = Island
WM = Wet meadow
MA = Marsh
US = Unconsolidated shore

MF = Mud Flat **OW** = Open Water

Forsyth NW – West Site Plant List (2013-2019)

Scientific Names	Common Names	GP Indicator Status ^(a)
Agropyron cristatum	Crested Wheatgrass	NL
Alisma triviale	Northern Water-Plantain	OBL
Amaranthus retroflexus	Red-Root	FACU
Ambrosia psilostachya	Perennial Ragweed	FACU
Ammannia robusta	Grand Redstem	OBL
Aquatic macrophytes	Aquatic macrophytes	NL
Artemesia biennis	Biennial Wormwood	FACU
Asclepias speciosa	Showy Milkweed	FAC
Atriplex argentea	Silverscale	FAC
Bassia scoparia	Mexican-Fireweed	FACU
Bromus carinatus	California Brome	NL
Bromus inermis	Smooth Brome	UPL
Bromus arvensis	Japanese Brome	NL
Bromus tectorum	Cheatgrass	NL
Carex sp.	Sedge	NL
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	NL
Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia sophia	Herb Sophia	NL
Distichlis spicata	Coastal Salt Grass	FACW
Echinochloa crus-galli	Large Barnyard Grass	FAC
Elaeagnus angustifolia	Russian-Olive	FACU
Eleocharis palustris	Common Spike-Rush	OBL
Elymus canadensis	Nodding Wild Rye	FACU
Elymus hispidus	Intermediate Wheatgrass	NL
Elymus repens	Creeping Wild Rye	FACU
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Euphorbia esula	Leafy Spurge	NL
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	NL

Scientific Names	Common Names	GP Indicator Status ^(a)
Melilotus officinalis	Yellow Sweet-Clover	FACU
Muhlenbergia asperifolia	Alkali Muhly	FDCW
Nassella viridula	Green Needle Grass	NL
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	NL
Ribes aureum	Golden Currant	FACU
Ribes cereum	Wax Currant	NL
Rosa arkansana	Prairie Rose	FACU
Rumex crispus	Curly Dock	FAC
Sagittaria cuneata	Arum-Leaf Arrowhead	OBL
Salicornia rubra	Red Saltwort	OBL
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	NL
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	NL
Typha angustifolia	Narrow-Leaf Cat-Tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Xanthium strumarium	Rough Cockleburr	FAC
Yucca glauca	Small Soapweed Yucca	NL

⁽a) 2016 NWPL (Lichvar et al., 2016)

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - West			city/County:	Rosebud		Samp	ling Date:	11-Jul-19
Applicant/Owner: MDT				State:	: MT Sa	mpling Point:		P-1U
nvestigator(s): Mark Traxler, Tanner	Гraxler		Section, To	wnship, Ra	inge: S 20	T _7N	R 39E	
Landform (hillslope, terrace, etc.):	Hillside		Local relief	(concave, o	convex, none): con	vex	Slope:	1.0 % / 0.6 °
ubregion (LRR): LRR G		Lat.: 46	.33927		Long.: -106.876	743	Datu	m: WGS84
oil Map Unit Name: Marvan silty cla	v 0-2 nercent slones				-	classification:	— Not Manner	1
e climatic/hydrologic conditions on		time of year?	Yes	o No		in in Remarks		
Are Vegetation , Soil		significantly			ormal Circumstanc		Yes 💿	No O
		-				-		
Are Vegetation, Soil Summary of Findings - At		naturally pro		•	eded, explain any a ations, transo		•	atures, etc.
Hydrophytic Vegetation Present?	Yes O No 💿				<u> </u>	<u> </u>		<u> </u>
Hydric Soil Present?	Yes O No 💿			Sampled A				
Wetland Hydrology Present?	Yes ○ No •		withir	a Wetland	_{i?} Yes 🔾 No 🖲)		
Remarks:								
Point on southwest side of open w	ater on hillside above D	P-1W.						
VEGETATION - Use scien	tific names of pl	ants	Dominant	FWS Re	gion: GP			
		Absolute	_Species? Rel.Strat.	Indicator	Dominance Test	worksheet:		
Tree Stratum (Plot size: 30 Foo		% Cover	Cover	Status	Number of Domina	nt Species		
1					That are OBL, FAC	N, or FAC:	1	(A)
2			<u> </u>		Total Number of Do	ominant		
4.			H		Species Across All S	Strata:	3	(B)
T		0_			Percent of domin	ant Species		
Sapling/Shrub Stratum (Plot size:	15 Foot Radius)	0	= Total Co	ver	That Are OBL, FA		33.3	8% (A/B)
1 Sarcobatus vermiculatus		20	✓ 100.0%	FAC	Prevalence Index	auleahaatı		
2			0.0%		Total % Co		fultiply by:	
3.		0	0.0%		OBL species		1 =	0
4.		0	0.0%		FACW species			20
5.		0	0.0%		FAC species			<u>75 </u>
		20	= Total Co	ver	FACU species		(4 =	
Herb Stratum (Plot size: 5 Foot I	Radius)				UPL species		· · · · · · · · · · · · · · · · · · ·	0
			30.8%	FACU	Column Totals:	-		
			30.8%	FACU				
			15.4%	FACU	Prevalence I	ndex = B/A =	_3.47	<u>′1</u>
Hordeum jubatum Lactuca serriola			15.4%	FACW	Hydrophytic Vege	etation Indicat	ors:	
6			0.0%	FAC	1 - Rapid Tes	st for Hydroph	vtic Vegeta	tion
7			0.0%			ce Test is > 50		
8			0.0%			e Index is ≤3		
9.			0.0%		4 - Mornholo	gical Adaptati	ons ¹ (Provid	le supporting
10.		0	0.0%			narks or on a		
		65	= Total Co	ver	Problematic	Hydrophytic V	egetation 1 (Explain)
Woody Vine Stratum (Plot size:	30 Foot Radius)				¹ Indicators of h	ydric soil and	wetland hy	drology must
1		0			be present.			
2.								
		0	= Total Co	ver	Hydrophytic			
% Bare Ground in Herb Stratum	Е		- 10tai C0	•••	Vegetation Present?	Yes O No	•	
					Present?	105 0 110		
Remarks:								
Data point includes various upland	grasses and forbs.							

US Army Corps of Engineers

Soil Sampling Point: DP-1U

Depth Matrix (inches) Color (moist)						absence of indicator	,
	%	Red Color (moist)	ox Featu %	res <u>Tvpe ¹</u>	Loc2	Texture	Remarks
(inches) Color (moist) 0-4 10YR 3/2	100	Color (Illoist)	<u>-70</u>	IVDE	LUC-	Loam	roots
							salt crystals
4-20 10YR 3/2	100		-			Clay Loam	
							_
			-			-	
1Type: C=Concentration. D=Depletion.	RM=Reduced	Matrix CS=Covere	ed or Coate	ed Sand Gra	ns 2l oca	ation: PL=Pore Lining.	M=Matrix
Hydric Soil Indicators: (Applicable					113 LOCK		roblematic Hydric Soils ³ :
Histosol (A1)	to all LKKS,	Sandy Gleyed	-			1 cm Muck (A	<u>-</u>
Histic Epipedon (A2)		Sandy Redox (ie Redox (A16) (LRR F, G, H)
Black Histic (A3)		Stripped Matrix					(S7) (LRR G)
Hydrogen Sulfide (A4)		Loamy Mucky	. ,	1)		_	Depressions (F16)
Stratified Layers (A5) (LRR F)		Loamy Gleyed	•	•		_ ,	utside of MLRA 72 and 73)
1 cm Muck (A9) (LRR F,G,H)		Depleted Matri	ix (F3)			Reduced Ver	•
Depleted Below Dark Surface (A11))	Redox Dark Su	. ,			Red Parent M	` '
Thick Dark Surface (A12)		Depleted Dark	-	7)			Dark Surface (TF12)
Sandy Muck Mineral (S1)		Redox depress	` '			= '	in in Remarks)
2.5 cm Mucky Peat or Peat (S2) (LR		High Plains De	•	• •		³ Indicators of hydi	rophytic vegetation and wetland
☐ 5 cm Mucky Peat or Peat (S3) (LRR	. F)	(MLRA 72	and 73 of	f LRR H)		hydrology must be	e present, unless disturbed or problematic
Restrictive Layer (if present):							
Type:							
Depth (inches):		_				Hydric Soil Preser	nt? Yes O No 💿
Remarks:							
No hydric soil indicators observed. S	Salt crystals a	re likely avosum	crystals	formed thr	ouah per	iodic wetting and dry	ving of the soil.
	our or yours a		G. / Cta. C		oug po.	iouio rrotuing unu un	, 0
Hydrology							
						Secondary I	odicators (minimum of two required)
Wetland Hydrology Indicators:	ne required: o	heck all that ann	nlv)				ndicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of on	ne required; c					Surface	Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1)	ne required; c	Salt Crust (B	11)	/B12\		Surface Sparsel	Soil Cracks (B6) y Vegetated Concave Surface (B8)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2)	ne required; c	Salt Crust (B	11) rtebrates (. ,		Surface Sparsel Drainag	Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3)	ne required; c	Salt Crust (B Aquatic Inve	11) rtebrates (ılfide Odor	(C1)		Surface Sparsel Drainag Oxidize	Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ne required; c	Salt Crust (B Aquatic Inve Hydrogen St Dry Season	:11) rtebrates (ılfide Odor Water Tab	(C1) le (C2)	poto (C2)	Surface Sparsel Drainag Oxidize	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ne required; c	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi	rtebrates (Ilfide Odor Water Tab zospheres	(C1) le (C2) on Living R	oots (C3)	Surface Sparsel Drainag Oxidize (w	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3)	ne required; o	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where	rtebrates (ulfide Odor Water Tab zospheres	(C1) le (C2) on Living R	oots (C3)	Surface Sparsel Drainag Oxidize (w Crayfisl Saturat	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4)	ne required; o	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi	rtebrates (ulfide Odor Water Tab zospheres	(C1) le (C2) on Living R	oots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where	ntebrates (Ilfide Odor Water Tab zospheres not tilled) Reduced I	(C1) le (C2) on Living Ro	oots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4)		Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where	rtebrates (Ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7	(C1) le (C2) on Living Re ron (C4)	oots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where I Presence of Thin Muck Si	rtebrates (Ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7	(C1) le (C2) on Living Re ron (C4)	oots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager	ry (B7)	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where I Presence of Thin Muck Si	rtebrates (Ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7	(C1) le (C2) on Living Re ron (C4)	pots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9)	ry (B7)	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where I Presence of Thin Muck Si	ntebrates (alfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Rema	(C1) le (C2) on Living Re ron (C4)	oots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes	ry (B7) No •	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where Presence of Thin Muck So Other (Expla	ntebrates (Ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Rema	(C1) le (C2) on Living Re ron (C4)	pots (C3)	Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes	nry (B7) No • No •	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Oxidized Rhi (where I Presence of Thin Muck Si Other (Expla	ntebrates (alfide Odor Water Tab zospheres not tilled) Reduced In urface (C7 in in Remains): hes):	(C1) le (C2) on Living Re ron (C4)		Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes	ry (B7) No No No	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where Presence of Thin Muck So Other (Expla	ntebrates (alfide Odor Water Tab zospheres not tilled) Reduced In urface (C7 in in Remains): hes):	(C1) le (C2) on Living Re ron (C4)		Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomo FAC-ne Frost H	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rrphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present?	ry (B7) No No No No No No No No	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where I Presence of Thin Muck St Other (Explain	ntebrates (ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Remaines): hes):	r(C1) le (C2) on Living Ro ron (C4)) arks)	Wetl	Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rrphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes (includes capillary fringe)	ry (B7) No No No No No No No No	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where I Presence of Thin Muck St Other (Explain	ntebrates (ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Remaines): hes):	r(C1) le (C2) on Living Ro ron (C4)) arks)	Wetl	Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rrphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes (includes capillary fringe)	ry (B7) No No No No No No No No	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where I Presence of Thin Muck St Other (Explain	ntebrates (ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Remaines): hes):	r(C1) le (C2) on Living Ro ron (C4)) arks)	Wetl	Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rrphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Carried Observations: Surface Water Present? Yes Saturation Present? Yes Carried Observations (Stream gaser) Prescribe Recorded Data (Stream gaser)	No • No • No • No • No •	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season \ Oxidized Rhi (where Presence of Thin Muck Si Other (Expla) Depth (inci Depth (inci r well, aerial pho	rtebrates (ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Rema hes): hes): hes):	r(C1) le (C2) on Living Ro ron (C4)) arks)	Wetl	Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rrphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Cincludes capillary fringe) Describe Recorded Data (stream games)	No • No • No • No • No •	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season \ Oxidized Rhi (where Presence of Thin Muck Si Other (Expla) Depth (inci Depth (inci r well, aerial pho	rtebrates (ilfide Odor Water Tab zospheres not tilled) Reduced I urface (C7 in in Rema hes): hes): hes): tos, prev	r(C1) le (C2) on Living Ro ron (C4)) arks)	Wetl	Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	e Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rrphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)

US Army Corps of Engineers Great Plains - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - West		c	City/County:	Rosebud	Sampling Date: 11-Jul-19
Applicant/Owner: MDT				State:	e: MT Sampling Point: DP-1W
Investigator(s): Mark Traxler, Tanner	Traxler		Section, To	wnship, Ra	ange: S 20 T 7N R 39E
Landform (hillslope, terrace, etc.):	Floodplain		Local relief	(concave, c	convex, none): concave Slope: 0.0 % / 0.0
Subregion (LRR): LRR G		Lat.: 46.	.33925		Long.: -106.876672 Datum: WGS84
Soil Map Unit Name: Marvan silty cla	av, 0-2 percent slopes				NWI classification: Not Mapped
re climatic/hydrologic conditions on		time of year?	Yes	s • No C	
Are Vegetation, Soil	, or Hydrology	significantly (disturbed?	Are "N	Normal Circumstances" present? Yes No
Are Vegetation, Soil	, or Hydrology	naturally pro	blematic?	(If nee	eded, explain any answers in Remarks.)
	_			•	cations, transects, important features, etc.
Hydrophytic Vegetation Present?	Yes ● No ○		Te the	Sampled A	A
Hydric Soil Present?	Yes No			-	_{d?} Yes No
Wetland Hydrology Present?	Yes No		Within	a Wetiano	1; 1cs 0 NO 0
Remarks: Point on southwest side of open w VEGETATION - Use scien		ants	Dominant	FWS Re	egion: GP
			Species? Rel.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 Foo		% Cover		Status	Number of Dominant Species
1			<u> </u>	. — —	That are OBL, FACW, or FAC:1 (A)
2			<u> </u>		Total Number of Dominant
3. 4.					Species Across All Strata:1 (B)
1.			= Total Co	· — —	Percent of dominant Species
Sapling/Shrub Stratum (Plot size:	15 Foot Radius)		- 10tai Co	Vei	That Are OBL, FACW, or FAC: 100.0% (A/B)
1		0			Prevalence Index worksheet:
2					Total % Cover of: Multiply by:
3		0			OBL species 2 x 1 = 2
4					FACW species 80 x 2 = 160
5					FAC species <u>10</u> x 3 = <u>30</u>
(Diet size, E Foot	Deding \	0	= Total Co	ver	FACU species $0 \times 4 = 0$
Herb Stratum (Plot size: 5 Foot I	Kadius j	20	✓ 87.0%		UPL species $0 \times 5 = 0$
Spartina pectinata Rumex crispus			✓ 87.0% 10.9%	FACW FAC	Column Totals: <u>92</u> (A) <u>192</u> (B)
3. Eleocharis palustris			2.2%	OBL	Prevalence Index = B/A = 2.087
4.			0.0%		Hydrophytic Vegetation Indicators:
5.		0	0.0%		
6					✓ 1 - Rapid Test for Hydrophytic Vegetation
7. 8.					✓ 2 - Dominance Test is > 50%
9.			0.0%		✓ 3 - Prevalence Index is ≤3.0 ¹
10.			0.0%		 4 - Morphological Adaptations ¹(Provide supporting data in Remarks or on a separate sheet)
			= Total Co		Problematic Hydrophytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size:	30 Foot Radius)	92	- 10tai C0	Vei	
		0			¹ Indicators of hydric soil and wetland hydrology must be present.
1 2.		•			
۷۰			C		Hydrophytic
% Bare Ground in Herb Stratum	8	0	= Total Co	ver	Vegetation Present? Yes No
Remarks:					
Narrow wetland fringe around peri	meter of open water.				

US Army Corps of Engineers

Soil Sampling Point: DP-1W

Profile Descr	iption: (Describe	to the depth ne	eded to document	the indic	ator or cor	firm the	absence of indicators.)
Depth	Matrix			ox Featu			
(inches)	Color (moist)		Color (moist)	%	Type 1	Loc ²	Texture Remarks
0-20	10YR 5/1	90	10YR 5/6	10	D	M	Clay Loam
1Type: C=Cor	ncentration. D=Deple	etion. RM=Reduce	ed Matrix, CS=Covere	d or Coate	ed Sand Grai	ns ² Loca	ation: PL=Pore Lining. M=Matrix
Hydric Soil I	ndicators: (Appli	cable to all LRR	s, unless otherwis	e noted.))		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Gleyed	Matrix S4			1 cm Muck (A9) (LRR I, J)
. —	pedon (A2)		Sandy Redox (•			Coastal Prairie Redox (A16) (LRR F, G, H)
Black Hist	` '		Stripped Matrix	. ,			Dark Surface (S7) (LRR G)
	Sulfide (A4) Layers (A5) (LRR F)		Loamy Mucky I	-	-		High Plains Depressions (F16)
	k (A9) (LRR F,G,H)		Loamy Gleyed✓ Depleted Matri	•	.)		(LRR H outside of MLRA 72 and 73)
	Below Dark Surface ((A11)	Redox Dark Su	` ,			Reduced Vertic (F18)
	k Surface (A12)	` ,	Depleted Dark	. ,			Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
Sandy Mu	ck Mineral (S1)		Redox depress	ions (F8)			Other (Explain in Remarks)
2.5 cm Mu	ucky Peat or Peat (S2	2) (LRR G, H)	High Plains De	pressions	(F16)		³ Indicators of hydrophytic vegetation and wetland
5 cm Muc	ky Peat or Peat (S3)	(LRR F)	(MLRA 72	and 73 of	f LRR H)		hydrology must be present, unless disturbed or problematic.
Restrictive La	ayer (if present):						
Туре:							
Depth (incl	nes):						Hydric Soil Present? Yes ● No ○
Remarks:							
Soil meets cri	teria for depleted	matrix.					
	·						
Hydrology	1						
Wetland Hyd	rology Indicators:						Secondary Indicators (minimum of two required)
Primary Indi	cators (minimum	of one required;	check all that app	oly)			Surface Soil Cracks (B6)
Surface V	Vater (A1)		✓ Salt Crust (B	11)			Sparsely Vegetated Concave Surface (B8)
✓ High Wat	er Table (A2)		Aquatic Inve	rtebrates ((B13)		Drainage Patterns (B10)
✓ Saturation	n (A3)		Hydrogen Su	lfide Odor	(C1)		Oxidized Rhizospheres on Living Roots (C3)
☐ Water Ma	rks (B1)		Dry Season \	Water Tab	le (C2)		(where tilled)
	Deposits (B2)		Oxidized Rhi	zospheres	on Living Ro	oots (C3)	Crayfish Burrows (C8)
Drift depo	osits (B3)		(where	not tilled)			Saturation Visible on Aerial Imagery (C9)
Algal Mat	or Crust (B4)		Presence of	Reduced I	ron (C4)		Geomorphic Position (D2)
Iron Depo	osits (B5)		Thin Muck S	urface (C7)		FAC-neutral Test (D5)
Inundatio	on Visible on Aerial Ir	magery (B7)	Other (Expla	in in Rema	arks)		Frost Heave Hummocks (D7) (LRR F)
Water-Sta	ained Leaves (B9)						
Field Observa							
Surface Water	Present? Ye	es O No 💿	Depth (incl	nes):			
Water Table Pr	resent? Ye	es 💿 No 🔾	Depth (incl	nes):	4		
Saturation Pres	V C	s • No O	Depth (incl	Jec).	0	Wetla	and Hydrology Present? Yes $lacktriangle$ No $lacktriangle$
(includes capill	ary iringe)						
Describe Rec	orded Data (strea	m gauge, monit	or well, aerial pho	tos, prev	ious inspec	tions), if	available:
D '							
Remarks:							
Soil saturated	d to the surface ar	nd standing wat	er in pit at 4".				
I							

US Army Corps of Engineers Great Plains - Version 2.0

MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	Project Name: Forsyth NW - West 2. MDT Project #: STPP 14-6(9)259 3. Control #: 4059
3.	Evaluation Date: 7/11/19 4. Evaluator(s): M. Traxler, T. Traxler 5. Wetland/Site #(s): Forsyth NW - West
6.	Wetland Location(s): Township 7 N, Range 39 E, Section 20; Township 7 N, Range 39 E, Section 29
	Approximate Stationing or Roadposts: RP 280 on US 12
	Watershed: 14 - Middle Yellowstone County: _ Rosebud
7.	Evaluating Agency: RESPEC for MDT Purpose of Evaluation: Wetland potentially affected by MDT project Mitigation wetlands; pre-construction 8. Wetland Size (acre): 10.55 (measured, e.g. GPS)
	✓ Mitigation wetlands; post-construction 9. Assessment Area (AA) Size (acre): ≥10.55 (visually estimated (see manual for determining AA) (measured, e.g. GP)

10. CLASSIFICATION OF WETLAND AND AQUATIC HABITATS IN AA (See manual for definitions.)

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% OF AA
Riverine	Emergent Wetland		Permanent / Perennial	5
Depressional	Emergent Wetland	Excavated	Seasonal / Intermittent	31
Depressional	Unconsolidated Bottom	Diked	Seasonal / Intermittent	64

Comments: In 2018 the entire site flooded to the top of the dike. Emergent wetland and unconsolidated bottom habitat were present.

11. ESTIMATED RELATIVE ABUNDANCE (of similarly classified sites within the same Major Montana Watershed Basin; see manual.) common

12. GENERAL CONDITION OF AA

i. Disturbance: Use matrix below to select the appropriate response; see manual for Montana listed noxious weed and aquatic nuisance vegetation species lists.

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

Comments (types of disturbance, intensity, season, etc.): Construction activities in 2017 to repair the dike structure temporarily increased disturbance rating at the site to high in 2017 but was reduced to moderate in 2018 and remains moderate in 2019.

- ii. Prominent noxious, aquatic nuisance, and other exotic vegetation species: <u>Euphorbia esula, Convolvulus arvensis, Cirsium arvense, and</u> Tamarix ramosissima are species identified at this site in the past and may still occur on the site. No noxious weeds were observed in 2019.
- iii. Provide brief descriptive summary of AA and surrounding land use/habitat: AA includes existing and constructed wetlands within floodplain of an Unnamed Tributary of Big Porcupine. Surrounding land includes US 12 and livestock grazing.

13. STRUCTURAL DIVERSITY (Based on number of "Cowardin" vegetated classes present [do not include unvegetated classes]; see #10 above.)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management peristence of additional v		Modified Rating
≥3 (or 2 if one is forested) classes		NA	NA	NA
2 (or 1 if forested) classes		NA	NA	NA
1 class, but not a monoculture	mod	←NO	YES→	
1 class, monoculture (1 species comprises ≥90% of total cover)		NA	NA	NA

Comments: Emergent wetland with occasional trees and shrubs, as well as open water with aquatic macrophytes.

14A. HABITAT FOR FEDERA	LLY LI	STED	OR I	PROF	POSED	THRE	EATEN	IED (OR EN	IDANG	ERED	PLA	NTS C	OR AN	IMALS	3				
i. AA is Documented (D) or S Primary or critical habitat (list Secondary habitat (list special Incidental habitat (list special No usable habitat	t speci es)		6) to c		S S	eck bo	x base	ed on	defini	tions ir	n manu	al.								
ii. Rating: Based on the strong	est ha	bitat c	hoser	n in 14	4A(i) al	bove,	select t	the c	orresp	onding	function	onal i	point a	nd rati	ng.					
Highest Habitat Level	Doc/F				rimar		oc/Sec			Sus/Se				ncider		Sus	Incide	ntal	Non	е
Functional Point/Rating																			0L	
Sources for documented use			ations	reco	ords).															
4B. HABITAT FOR PLANTS OR ANIMALS RATED S1, S2, OR S3 BY THE MONTANA NATURAL HERITAGE PROGRAM Do not include species listed in 14A above.																				
AA is Documented (D) or Suspected (S) to contain: Check box based on definitions in manual. Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species) No usable habitat																				
ii. Rating: Based on the strong	gest ha	abitat o	chose	n in 1	4A(i) a	bove,	select	the c	corresp	onding	g functi	onal	point a	and rat	ing.					_
Highest Habitat Level	Doc/F	Prima	ry :	Sus/F	rimar	y Do	oc/Sec	onda	ary S	Sus/Se	conda	ry	Doc/I	ncider	ntal	Sus/	Incide	ntal	None	
S1 Species Functional Point/Rating				•				-		•									.0L	
S2 and S3 Species Functional Point/Rating		9H		•				-												
Sources for documented use (e.g. observations, records): Ammannia observed within AA in previous year. 4C. GENERAL WILDLIFE HABITAT RATING Evidence of Overall Wildlife Use in the AA: Check substantial, moderate, or low based on supporting evidence.																				
☐ Substantial: Based on any ☐ observations of abundan ☐ abundant wildlife sign su ☐ presence of extremely lin ☐ interview with local biolog	t wildlif ch as s niting h	e #s c scat, tr abitat	or high acks, featu	spec nest res n	cies div structu ot avai	ıres, g	ame tra	ails, e	etc.	d)	□ li	ew o ttle to pars	r no wi o no wi e adjad	idlife o ildlife s cent up	bserva sign bland f	ations ood s	during ources	g peak	k]. use po	
 Moderate: Based on any of ☑ observations of scattered ☑ common occurrence of w ☐ adequate adjacent upland ☐ interview with local biolog 	wildlife vildlife s d food	e grou sign si sourc	ips or uch as es	indivi scat	, tracks							perio	ds							
ii. Wildlife Habitat Features: \ For class cover to be considere percent composition of the AA (S/I = seasonal/intermittent; T/E	d even see #1	ly dist 0). A	ribute bbrev	d, the	e most s for su	and le urface	ast pre water	evalei durat	nt veg tions a	etated re as f	classe ollows:	es mu P/P	ust be v = perm	within 2 nanent	20% of /peren	f each				
Structural Diversity (see #13)		<u> </u>			High						_		derate						.ow	
Class Cover Distribution (all vegetated classes)		□ E	ven			☐ Un	even			□ E	ven			⊠ Un	even			□ E	ven	
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	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
□ Low Disturbance at AA (see #12i)																				
Moderate Disturbance at AA (see #12i)														М						
☐ High Disturbance at AA (see #12i)																				
iii. Rating: Use the conclusion	s from	i and	ii abo	ve ar								oint	and rat	ting.		_				
Evidence of Wildlife Use					٧	Vildlife	e Habit	at Fe	eature	s Rati	ng (ii)									
(i)		Ex	ceptic	nal			High			⊠ Mo	oderat	е		⊠ Lo	w					
Substantial																				
⊠ Moderate										.;	5M					-				
☐ Minimal																				
Comments: Several bird specie	es obse	erved.	Also	obse	rved a	northe	rn leor	oard 1	frog ar	nd dee	r tracks	<u>.</u>								

14D. GENERAL FISH HABITAT	■ NA (proceed to 14E)
---------------------------	-----------------------

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 the NA box and proceed to 14E.

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].

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

i. Habitat Quality and Known / Suspected Fish Species in AA: Use matrix to select the functional point and rating.

Duration of Surface Water in AA	☐ Pe	erman	ent / P	erenn	ial		⊠ s	easo	nal / Ir	ntermit	tent		□ т	empo	rary / I	Ephen	neral	
Aquatic Hiding / Resting / Escape Cover	Opti] mal	Adeq] uate	Po	or	Opti] mal		⊠ quate	Po	or	Opt	 timal	Aded] uate	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																		
FWP Tier II or Native Game fish species																		
FWP Tier III or Introduced Game fish																		
FWP Non-Game Tier IV or No fish species										.3L								

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

ii. Modified Rating: NOTE: Modified score cannot exceed 1.0 or be less than 0.1.

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity, or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? TES, reduce score in i by 0.1 = __ or 🖾 N0

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area; specify in comments) for native fish or introduced game fish? \square YES, add to score in i or iia 0.1 = __ or \boxtimes N0

iii. Final Score and Rating: .3L Comments: Unidentified 3-inch fish observed during field survey in 2015 and 2018.

14E. FLOOD ATTENUATION

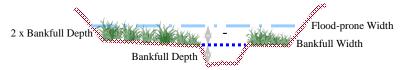
■ NA (proceed to 14F) Applies only to wetlands that are subject to flooding via in-channel or overbank flow.

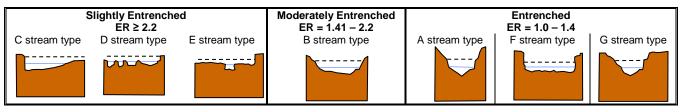
If wetlands in AA are not flooded from in-channel or overbank flow, check the NA box and proceed to 14F.

Entrenchment Ratio (ER) Estimation (see manual for additional guidance). Entrenchment ratio = (flood-prone width) / (bankfull width). Flood-prone width = estimated horizontal projection of where 2 X maximum bankfull depth elevation intersects the floodplain on each side of the stream.

<u>35</u> = 70 /

flood prone width / bankfull width = entrenchment ratio





i. Rating: Working from top to bottom, use the matrix below to select the functional point and rating

rating: Working from top to bottom, use the m											
Estimated or Calculated Entrenchment	☐ Sli	ightly Entrei	nched		erately Entr	renched	☐ Entrenched				
(Rosgen 1994, 1996)	C, D	, E stream t	ypes	В	stream typ	е	A, F, G stream types				
Percent of Flooded Wetland Classified as											
Forested and/or Scrub/Shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%		
AA contains no outlet or restricted outlet						.5M					
AA contains unrestricted outlet											

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA? YES NO Comments: Surface water enters AA via box culvert and from overbank flow from Big Porcupine Creek; dike repaired on SE end of wetland in 2017.

14F. SHORT AND LONG TERM SURFACE WATER STORAGE	■ NA (proceed to 14G)
--	-----------------------

Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, then check the NA box and proceed to 14G.

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

	5 5			eet	□ 1.1	to 5 ac	re 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 year	s		.9H								
Wetlands in AA flood or pond < 5 out of 10 year	s										

Comments: A large area of the AA is seasonally flooded by East Spring Coulee.

Applies to wetland with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, check the NA box and proceed to 14H.

i. Rating: Working from top to bottom, use the matrix below to select the functional point and rating.

Sediment, Nutrient, and Toxicant Input Levels within AA	AA receive has potent nutrients, such that of substantial sedimental toxicants, present.	ial to delivor compou other funct lly impaire tion, sourc	er sedime nds at lev ions are n d. Minor es of nutr	ents, rels oot rients or	Waterbody is need of TMDI causes" relat toxicants or A has potential nutrients, or c functions are sedimentation or signs of eu	developmer ed to sedime AA receives of to deliver hig compounds s substantially n, sources of	nt for "probal nt, nutrients, or surroundin gh levels of s such that oth y impaired. M nutrients or	ole or g land use ediments, er ajor
% Cover of Wetland Vegetation in AA	□≥.	70%	⊠ <	70%	□≥7	70%	□<	70%
Evidence of Flooding / Ponding in AA	☐ Yes	□No	⊠ Yes	☐ No	☐ Yes ☐ No		☐ Yes	☐ No
AA contains no or restricted outlet			.7M					
AA contains unrestricted outlet								

Comments: Open/standing water was present across entire site in 2019 with wetland vegetation cover estimated at 40 percent site wide.

14H. SEDIMENT / SHORELINE STABILIZATION NA (proceed to 14I)

Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action.

If 14H does not apply, check the NA box and proceed to 14I.

% Cover of Wetland Streambank or Shoreline by Species with Stability	Duration of S	urface Water Adjacent to Roo	ted Vegetation
Ratings of ≥6 (see Appendix F).	☐ Permanent / Perennial	Seasonal / Intermittent	☐ Temporary / Ephemeral
□ ≥ 65%			
⊠ 35-64%		.6M	
☐ < 35%			

Comments: AA is subject to surface water flows during runoff in UT-Big Porcupine Creek.

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

i. Level of Biological Activity: Synthesis of wildlife and fish habitat rates (select).

General Fish Habitat Rating	General Wildlife Habitat Rating (14Ciii)						
(14Diii)	☐ E/H	⊠ M	Ĺ				
☐ E/H							
■ M							
⊠L		M					
□ NA							

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

Α	⊠ '	Vegeta	ted Co	mponent	: >5 ac	res		Vegeta	ated Co	mponent	1-5 ac	res		Veget	ated Co	mponen	t <1 acı	re
В	_	ligh	⊠ M	oderate		Low	_ 	ligh		derate		Low	_ 	ligh	☐ Mo	derate		.ow
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P																		
S/I			.7M															
T/E/A																		

			Wetland	l/Site #(s): Forsyth NW	- West			
14I. PRODUCTION EXPORT / FOOD CH	IAIN SU	JPPORT (contin	nued)						
iii. Modified Rating: Note: Modified scor	e canno	ot exceed 1.0 o	r be less than	0.1.					
Vegetated Upland Buffer: Area with mowing or clearing (unless for weed colls there an average ≥ 50-foot wide veg	ontrol).						-		
iv. Final Score and Rating: <u>.8H</u> Comn	nents: <u>l</u>	Upland buffer be	etween northe	rn bound	ary of AA and	highway great	er than 5	Oft.	
14J. GROUNDWATER DISCHARGE / R Check the appropriate indicators in	-	_							
i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known or weeps with the toe of the wetland occurs at the toe of the AA permanently flooded during the Wetland contains an outlet, bound the second of the second occurs.	ormant so a natura land ed ng droug ut no in	season/drought al slope. lge. ght periods. ılet.		☐ Peri ☐ Wet	land contains am is a knowr	ate present wi inlet but no ou n 'losing' strea	ıtlet.		•
iii. Rating: Use the information from i an	d ii abo	ve and the table	e below to sele	ct the fur	nctional point a	and rating.			_
Criteria			Saturation at A ATER THAT I ⊠ S	S RECH				STEM	
☐ Groundwater Discharge or Rech	arge		.7M						
☐ Insufficient Data/Information Comments: Site hydrology is combination									
14K. UNIQUENESS i. Rating: Working from top to bottom, us	se the m	natrix below to s	select the func	tional poi	nt and rating.				
Replacement Potential	spring forest assoc	ontains fen, bo gs or mature (: ted wetland Of ciation listed a ITNHP	>80 yr-old) ≷ plant	cited ra diversi contail	es not contail are types ANI ity (#13) is hig ns plant asso as "S2" by the	o structural gh OR ciation	previou associa	es not containusly cited rareations AND sty (#13) is low	e types OR tructural
Estimated Relative Abundance (#11)	□ Rare	e 🗆 Common	□ Abundant	□ Rare		☐ Abundant	□ Rare	□ Common	☐ Abundan
Low Disturbance at AA (#12i)									
Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i)					.5M				
Comments: AA with several mature trees	and is	managed in a n	atural state.			ı			
14L. RECREATION / EDUCATION POTI Affords 'bonus' points if AA provides i. Is the AA a known or potential recrea ii. Check categories that apply to the A	a recre	eational or educ	site? XES	inity. 5 , go to ii.	NO, che	eck the NA box	۲.	imptive recrea	ational
iii. Rating: Use the matrix below to select		·	nd rating.						
		al Recreational		al Area			Known	Potential	
Public ownership or public easemer					n required)			.15H	
Private ownership with general publ Private or public ownership without					sion for publi	ic access			

	Known of Potential Recreational of Educational Area	KIIOWII	Potential
	Public ownership or public easement with general public access (no permission required)		.15H
	Private ownership with general public access (no permission required)		
	Private or public ownership without general public access, or requiring permission for public access		
С	omments: Property owned by MDT.	•	

15. GENERAL SITE NOTES: _____

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	low 0.00	1.00	0					
B. MT Natural Heritage Program Species Habitat	high 0.90	1.00	9.50	*				
C. General Wildlife Habitat	mod 0.50	1.00	5.28	*				
D. General Fish Habitat	low 0.30	1.00	3.17					
E. Flood Attenuation	mod 0.50	1.00	6.33					
F. Short and Long Term Surface Water Storage	high 0.90	1.00	9.50	*				
G. Sediment / Nutrient / Toxicant Removal	mod 0.70	1.00	7.39	*				
H. Sediment / Shoreline Stabilization	mod 0.60	1.00	6.33					
I. Production Export / Food Chain Support	mod 0.70	1.00	7.39					
J. Groundwater Discharge / Recharge	mod 0.70	1.00	7.39	*				
K. Uniqueness	mod 0.50	1.00	5.28					
L. Recreation / Education Potential (bonus point)	high 0.15		1.58					
Total Points	6.45	11		Functional Units				
Percent of Possible Score 59% (round to nearest whole number)								

	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; if not 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 #).
Į	
_	
0	OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.

RESPEC / MDT WETLAND MITIGATION SITE MONITORING FORM

Project Name: Forsyth NW - Middle Assessment Date: July 11, 2019 Traxler Location: ~8 miles NW of Forsyth Milepost: ~262 on US 12 Legal Description: T 7N R 39E Weather Conditions: 85 degrees, sunny Initial Evaluation Date: August 15, 2013 Size of evaluation area: 1.8 acres	Section <u>33</u> Moni	Project Number: Person(s) conducting the assessment: M. Traxler, T. MDT District: Glendive Section 33 Time of Day: 9:30AM-10:30 AM Monitoring Year: 7 # Visits in Year: 1 Land use surrounding wetland: Ag, grazing, US Hwy 12					
Surface Water Source: Precipitation, runoff, shallow groundwater Inundation: Absent Average Depth: O feet Range of Depths: O Percent of assessment area under inundation: O% Depth at emergent vegetation-open water boundary: O feet 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.): Geomorphic position, surface soil cracks Groundwater Monitoring Wells: Absent							
Record depth of water below ground surface Well Number Depth Well Number Depth Well Number Depth Depth		Well Number	Depth	1			
Additional Activities Checklist: Map emergent vegetation-open water b Observe extent of surface water during elevations (drift lines, erosion, vegetati Use GPS to survey groundwater monito COMMENTS / PROBLEMS: Soil not saturated during mid-July surve	ooundary on aer each site visit a ion staining, etc oring well locat	ial photograph. and look for eviden a.) ions, if present.	ace of past si				

VEGETATION COMMUNITIES

Community Number: 3 Community Title (main spp): Pascopyrum smithii / Elymus canadensis

Dominant Species	% Cover	Dominant Species	% Cover
Bare Ground	+ = < 1%	Symphoricarpos albus	1 = 1-5%
Bromus arvensis	+ = < 1%	Lactuca serriola	1 = 1-5%
Cirsium arvense	1 = 1-5%	Linum lewisii	1 = 1-5%
Elymus canadensis	1 = 1-5%	Pascopyrum smithii	4 = 21-50%
Populus deltoides	2 = 6-10%	Rumex crispus	1 = 1-5%
Sarcobatus vermiculatus	1 = 1-5%	Thlaspi arvense	1 = 1-5%

Comments / Problems: Elymus trachycaulus-2; Bromus inermis-1; Grindelia squarrosa-1

Community Number: 4 Community Title (main spp): Puccinellia nuttalliana / Hordeum jubatum

Dominant Species	% Cover	Dominant Species	% Cover
Bare ground	2 = 6-10%	Populus deltoides	+ = < 1%
Bromus arvensis	1 = 1-5%	Hordeum jubatum	2 = 6-10%
ELymus repens	1 = 1-5%	Puccinellia nuttalliana	3 = 11-20%
Pascopyrum smithii	2 = 6-10%	Schedonorus pratensis	2 = 6-10%
Rumex crispus	2 = 6-10%	Schoenoplectus maritimus	2 = 6-10%
Eleocharis palustris	4 = 21-50%	Salix lutea	1 = 1-5%

Comments / Problems: Alopecurus arundinaceus-1; Poa pratensis-1; Muhlenbergia asperifolia <1

Community Number: ___ Community Title (main spp):

Dominant Species	% Cover	Dominant Species	% Cover

Comments / Problems: _____

Community Number: ___ Community Title (main spp): ____

Dominant Species	% Cover	Dominant Species	% Cover

Comments / Problems: _____

PLANTED WOODY VEGETATION SURVIVAL

Plant Species	Number Originally Planted	Number Observed	Mortality Causes

Comments / Problems: <u>No planted woody vegetation. Young volunteer cottonwoods doing well around edge of wetland, especially on south side of east end.</u>

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW - Middle Date: July 11, 2019 Examiner: M. Traxler, T. Traxler

Transect Number: 1 Approximate Transect Length: 50 feet Compass Direction from Start: 205° Note:

Transect Interval Length: 14 feet (station 0-14)	
Vegetation Community Type: 3 - Pascopyrum smithii / Elymus	canadensis
Plant Species	Cover
Bassia scoparia	1 = 1-5%
Pascopyrum smithii	2 = 6-10%
Schedonorus pratensis	1 = 1-5%
Lepidium perfoliatum	1 = 1-5%
Bare Ground	1 = 1-5%
Bromus tectorum	4 = 21-50%
Chenopodium album	3 = 11-20%
Elymus canadensis	2 = 6-10%
Total Vegetative Cover:	80%

Transect Interval Length: 19 feet (station 14-33)	
Vegetation Community Type: 4 - Puccinellia nuttalliana	Hordeum
jubatum	
Plant Species	Cover
Bare Ground	1 = 1-5%
Hordeum jubatum	3 = 11-20%
Puccinellia nuttalliana	2 = 6-10%
Elymus repens	2 = 6-10%
Schedonorus pratensis	4 = 21-50%
Eleocharis palustris	2 = 6-10%
Rumex crispus	2 = 6-10%
Total Vegetative Cover:	90%

Transect Interval Length: 17 feet (station 33-50)	
Vegetation Community Type: 3 - Pascopyrum smithii / Elymus	spp.
Plant Species	Cover
Bare Ground	+ = < 1%
Elymus canadensis	+ = < 1%
Melilotus officinalis	5 = > 50%
Schedonorus pratensis	2 = 6-10%
Elymus trachycaulus	2 = 6-10%
Pascopyrum smithii	1 = 1-5%
Symphoricarpos albus	1 = 1-5%
Populus deltoides	4 = 21-50%
Poa pratensis	+ = < 1%
Hordeum jubatum	+ = < 1%
Total Vegetative Cover:	95%

Transect Interval Length:	
Vegetation Community Type:	
Plant Species	Cover
Total Vegetative Cover:	%

MDT WETLAND MONITORING - VEGETATION TRANSECT

Cover Estimate + = < 1% 1 = 1-5% 2 = 6-10%	3 = 11-10% 4 = 21-50% 5 = > 50%	Indicator Class + = Obligate - = Facultative/Wet 0 = Facultative	Source P = Planted V = Volunteer
Percent of perim	eter developing we	cland vegetation (excluding dam/berm struct	ures):%

Establish transects perpendicular to the shoreline (or saturated perimeter). The transect should begin in the upland area. Permanently mark this location with a standard metal fencepost. Extend the imaginary transect line towards the center of the wetland, ending at the 3 foot depth (in open water), or at the point where water depths or saturation are maximized. Mark this location with another metal fencepost.

Estimate cover within a 10 foot wide "belt" along the transect length. At a minimum, establish a transect at the windward and leeward sides of the wetland. Remember that the purpose of this sampling is to monitor, not inventory, representative portions of the wetland site.

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.

Location	Photograph Frame #	Photograph Description & Lat/Long	Compass Reading (°)
PP-1		Photo Point 1: 46.322174 / -106.840996	300
PP-2		Photo Point 2: 46.323803 / -106.844337	120
T-1 start		Transect 1 start: 46.322948 / -106.842323	205
T-1 end		Transect 1 end: 46.322754 / -106.842438	25
DP-1W		Wetland soil pit: 46.322942 / -106.842481	
DP-1U		Upland soil pit: 46.322911 / -106.842492	
		W & E along road buffer	

Comments / Problems:	•	
----------------------	---	--

GPS SURVEYING

Using a resource grade GPS survey the items on the checklist below. Collect at least 3 location points set at a 5 second recording rate. Record file numbers for site in designated GPS field notebook.

✓ Upland/wetland boundary.✓ 4-6 landmarks that are recognizable on the aerial photograph.
$ \times $ 4-6 landmarks that are recognizable on the aerial photograph.
Start and End points of vegetation transect(s).
Photograph reference points.
☐ Groundwater monitoring well locations. ☐ Bird nest boxes.
Bild liest boxes.
Comments / Problems:
WETLAND DELINEATION
(attach COE delineation forms)
At each site conduct these checklist items:
Delineate wetlands according to the 1987 Army COE manual and regional supplement.
Delineate wetland – upland boundary onto aerial photograph.
Comments / Problems:
FUNCTIONAL ASSESSMENT
Complete and attach full MDT Montana Wetland Assessment Method field forms.
Comments / Problems:

Comments / Problems: MAINTENANCE
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA
Comments / Problems: MAINTENANCE
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA If yes, describe the problems below and indicate if any actions were taken to remedy the problems.
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA 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
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA 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? NA
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA 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? NA If yes, are the structures working properly and in good working order? NA
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA 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? NA
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA 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? NA If yes, are the structures working properly and in good working order? NA
Comments / Problems: MAINTENANCE Were man-made nesting structure installed at this site? NA If yes, do they need to be repaired? NA 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? NA If yes, are the structures working properly and in good working order? NA If no, describe the problems below.

WILDLIFE

Mammal and Herptile Species	and Herptile Species Number Indirect Indication of U							
• •	Observed	Trac	CKS 7	50	at	Bul	rows	Other
			<u> </u>		<u> </u>		<u> </u>	
			<u> </u>	Ļ	_			
		 ⊢	<u>]</u> 1	<u> </u>				
Macroinvertebrate Sampling (sign of]]	ldlif	e n	oted o	luring	the 2019 field s
Macroinvertebrate Sampling (sign of	f wi	ldlif	e n	oted o	luring	the 2019 field s
Additional Activities Checklist: [A Macroinvertebrate Sampling (Comments / Problems: Very little		sign of	f wil	ldlif	ee n	oted o	luring	the 2019 field s
A Macroinvertebrate Sampling (sign of	f wil	ldlif	e n	oted (luring	the 2019 field s
Macroinvertebrate Sampling (sign o	f wil	ldlif	e n	oted o	luring	the 2019 field s
<u>A</u> Macroinvertebrate Sampling (sign o	f wil	ldlif	ie n	oted o	luring	the 2019 field s
<u>A</u> Macroinvertebrate Sampling (sign of	f wil	ldlif	ce n	oted o	luring	the 2019 field s
<u>A</u> Macroinvertebrate Sampling (sign of	f wil	ldlif	e n	oted o	luring	the 2019 field s

BIRD SURVEY - FIELD DATA SHEET

Site: Forsyth NW - Middle Date: 7/11/19
Survey Time: 9:30 to 10:30 am

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
DEMANDS GODEG				HADIEAE CODEC			

BEHAVIOR CODES

BP = One of a breeding pair **BD** = Breeding display

 $\mathbf{F} = Foraging$ FO = FlyoverL = LoafingN = Nesting

Weather: 85 degrees, sunny

N	O	tes:	

HABITAT CODES

SS = Scrub/Shrub $\mathbf{AB} = \text{Aquatic bed}$ FO = Forested**UP** = Upland buffer I = Island $\mathbf{WM} = \mathbf{Wet} \text{ meadow}$ MA = Marsh**US** = Unconsolidated shore

 $\mathbf{MF} = \mathbf{Mud} \; \mathbf{Flat}$ OW = Open Water

Forsyth NW – Middle Site Plant List (2013-2019)

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	NL
Bassia scoparia	Mexican-Fireweed	FACU
Bromus carinatus	California Brome	NL
Bromus arvensis	Japanese Brome	NL
Bromus tectorum	Cheatgrass	NL
Chenopodium album	Lamb's-Quarters	FACU
Cirsium arvense	Canadian Thistle	FACU
Convolvulus arvensis	Field Bindweed	NL
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 lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Euphorbia esula	Leafy Spurge	NL
Filago arvensis	Field Fluffweed	NL
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	NL
Melilotus officinalis	Yellow Sweet-Clover	FACU
Muhlenbergia asperifolia	Alkali Muhly	FAC
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
Polygonum aviculare	Yard Knotweed	FACU
Populus deltoides	Eastern Cottonwood	FAC
Puccinellia nuttalliana	Nuttall's Alkali Grass	OBL
Ratibida columnifera	Prairie Coneflower	NL
Rosa arkansana	Prairie Rose	FACU
Rumex acetosella	Common Sheep Sorrel	FAC
Rumex crispus	Curly Dock	FAC
Salix amygdaloides	Peach-Leaf Willow	FACW
Salix exigua	Narrow-Leaf Willow	FACW

Scientific Names	Common Names	GP Indicator Status ^(a)
Salix fragilis	Fragile Willow	FAC
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	NL
Symphoricarpos albus	Common Snowberry	UPL
Tamarix chinensis	Salt-cedar	NL
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	NL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Xanthium strumarium	Rough Cockleburr	FAC

⁽a) 2016 NWPL (Lichvar et al., 2016)

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - Middle			City/County:	Rosebud		Samp	ling Date:	11-Jul-19
Applicant/Owner: MDT				State:	: MT Sam	pling Point:		OP-1U
nvestigator(s): Mark Traxler, Tanner	Traxler		Section, To	wnship, Ra	inge: S _33	Γ_7N	R 39E	
Landform (hillslope, terrace, etc.):	Shoulder slope		Local relief	(concave, c	convex, none): conve	x	Slope:	5.0 % / 2.9
ubregion (LRR): LRR G		Lat.: 46	.322943		Long.: -106.84247	9	Datu	m: WGS84
pil Map Unit Name: Harlem silty cla	av 0 to 2 percent slopes	occasionally	flooded		NWI cla	ssification:	 Not Manner	
e climatic/hydrologic conditions or				s • No C				4
Are Vegetation , Soil		significantly		Are "N	ormal Circumstances		Yes 💿	No O
Are Vegetation , Soil ,		naturally pro			eded, explain any ans	•		
Summary of Findings - A				•			,	atures, etc.
Hydrophytic Vegetation Present?	Yes O No •				-			
Hydric Soil Present?	Yes O No 💿			Sampled A				
Vetland Hydrology Present?	Yes O No 💿		within	ı a Wetland	_{1?} Yes O No •			
Remarks:								
DP on slope above depression who	ere no positive hydrology	indicators ar	re evident to	date.				
VEGETATION - Use scien	itific names of pla	ants	Dominant —Species?	FWS Re	gion: GP			
Tree Stratum (Plot size: 30 Foo	st Padius		Rel.Strat.	Indicator	Dominance Test wo	orksheet:		
		<u>% Cover</u> 0	Cover	Status	Number of Dominant		1	(4)
1 2				- — —	That are OBL, FACW,	or fac:		(A)
3		0			Total Number of Dom		2	(D)
4.					Species Across All Stra	ata:		(B)
		0	= Total Co	ver	Percent of dominar		22.3	^^
Sapling/Shrub Stratum (Plot size:	15 Foot Radius)				That Are OBL, FAC	W, or FAC:	33.3	3% (A/B)
1. Populus deltoides		1	100.0%	FAC	Prevalence Index w	orksheet:		
2			0.0%		Total % Cove	er of: M	fultiply by:	
3		0_	0.0%		OBL species	x	1 = _	0
4. 5.			0.0%		FACW species	0x	2 =	0
J			= Total Co				3 =	3
Herb Stratum (Plot size: 5 Foot	Radius)	1	- Total Co	VCI	FACU species		4 =	384
1 Matthews - 60 at a dis-	,	70	✓ 72.9%	FACU	UPL species	×	5 =	0
2 =			20.8%	FACU	Column Totals:	<u>97</u> ((A) _	<u>387</u> (в)
3. Schedonorus pratensis			2.1%	FACU	Prevalence Ind	lex = B/A =	3.9	9
4. Elymus lanceolatus		_	2.1%	FACU	Hydrophytic Vegeta	tion Indicat	ors:	
				FACU				••
6. 7.			0.0%		1 - Rapid Test 1			tion
8			0.0%		2 - Dominance 3 - Prevalence			
9			0.0%					
10.			0.0%		4 - Morphologic data in Rema			
		96	= Total Co	ver	Problematic Hy	drophytic V	egetation ¹	(Explain)
Woody Vine Stratum (Plot size:	30 Foot Radius)				¹ Indicators of hyd	dric soil and	wetland hy	drology must
1		0			be present.			
2.								
-		0	= Total Co	ver	Hydrophytic			
% Bare Ground in Herb Stratum	4				Vegetation Present? Ye	es O No	•	
					Present			
Remarks:								
Well-vegetated upland buffer. Mel	ilotus dominant in 2019.							

US Army Corps of Engineers

Soil Sampling Point: DP-1U

Profile Description: (Describe to th Depth <u>Matrix</u>			lox Featu			,	
(inches) Color (moist)	%	Color (moist)	%	Tvpe 1	Loc2	Texture	Remarks
0-20 2.5Y 3/2	100					Clay Loam	
						-	
1Type: C=Concentration. D=Depletion.	. RM=Reduced	d Matrix, CS=Cover	ed or Coat	ed Sand Gra	ins ² Loca	ation: PL=Pore Lining. M=Ma	atrix
Hydric Soil Indicators: (Applicable						Indicators for Proble	
Histosol (A1)	to all LKKS	Sandy Gleyed				1 cm Muck (A9) (L	
Histic Epipedon (A2)		Sandy Redox					ox (A16) (LRR F, G, H)
Black Histic (A3)		Stripped Matri	. ,			Dark Surface (S7)	
Hydrogen Sulfide (A4)		Loamy Mucky	. ,	1)		High Plains Depres	,
Stratified Layers (A5) (LRR F)		Loamy Gleyed				= -	e of MLRA 72 and 73)
1 cm Muck (A9) (LRR F,G,H)		Depleted Matr	ix (F3)			Reduced Vertic (F1	•
Depleted Below Dark Surface (A11))	Redox Dark Su	. ,			Red Parent Materia	•
Thick Dark Surface (A12)		Depleted Dark	•	7)		Very Shallow Dark	` ,
Sandy Muck Mineral (S1)		Redox depress	, ,			Other (Explain in R	• •
2.5 cm Mucky Peat or Peat (S2) (LF	RR G, H)	High Plains De	epressions	(F16)		³ Indicators of hydrophyt	ic vegetation and wetland
5 cm Mucky Peat or Peat (S3) (LRR	. F)	(MLRA 72	and 73 o	f LRR H)		hydrology must be pres	ent, unless disturbed or problemat
Restrictive Layer (if present):							
testrictive Layer (ii prescrit).							
Type:							
						Hydric Soil Present?	Yes ○ No ●
Type:						Hydric Soil Present?	Yes ○ No ●
Type:		_				Hydric Soil Present?	Yes ○ No •
Type:						Hydric Soil Present?	Yes ○ No •
Type:						Hydric Soil Present?	Yes ○ No ●
Type: Depth (inches): Remarks: lo hydric soil indicators observed.						Hydric Soil Present?	Yes ○ No ●
Type: Depth (inches): Remarks: o hydric soil indicators observed.							
Type:							
Type:	ne required;	check all that app	ply)				ors (minimum of two required
Type:	ne required;	check all that ap				Secondary Indicat	ors (minimum of two require
Type:	ne required;	_	311)	(B13)		Secondary Indicat	cors (minimum of two required Cracks (B6) etated Concave Surface (B8)
Type:	ne required;	Salt Crust (E	311) ertebrates	` '		Secondary Indicat Surface Soil (Sparsely Veg	cors (minimum of two required Cracks (B6) etated Concave Surface (B8)
Type:	ne required;	Salt Crust (E	311) ertebrates ulfide Odoi	(C1)		Secondary Indicat Surface Soil (Sparsely Veg	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3)
Type:	ne required;	Salt Crust (E Aquatic Inve	311) ertebrates ulfide Odoi Water Tab	(C1) le (C2)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ne required;	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh	311) ertebrates ulfide Odoi Water Tab izospheres	(C1) le (C2) on Living R	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8)
Type:	ne required;	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where	B11) ertebrates ulfide Odor Water Tab izospheres not tilled	(C1) le (C2) on Living R	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9)
Type:	ne required;	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2)
Type: Depth (inches): Remarks: In hydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I furface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Fest (D5)
Type:		Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I furface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I furface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Fest (D5)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations:	ry (B7)	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I furface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Fest (D5)
Type:	ry (B7)	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I iurface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Fest (D5)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations:	ry (B7)	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Explain	B11) ertebrates ulfide Odor Water Tab izospheres not tilled) Reduced I Gurface (C7 ain in Remain	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes	ny (B7) No ● No ●	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Explain	B11) ertebrates ulfide Odor Water Tab izospheres not tilled) Reduced I furface (C7 ain in Remain thes):	(C1) le (C2) on Living R ron (C4)		Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Fest (D5)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes	ny (B7) No ● No ●	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	B11) ertebrates ulfide Odor Water Tab izospheres not tilled) Reduced I furface (C7 ain in Remain thes):	(C1) le (C2) on Living R ron (C4)		Secondary Indicat Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes	ny (B7) No No No No No No No No	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	and the second states and tilled; and till	r (C1) le (C2) on Living R ron (C4)) arks)	Wetla	Secondary Indicate Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes	ny (B7) No No No No No No No No	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	and the second states and tilled; and till	r (C1) le (C2) on Living R ron (C4)) arks)	Wetla	Secondary Indicate Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes	ny (B7) No No No No No No No No	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	and the second states and tilled; and till	r (C1) le (C2) on Living R ron (C4)) arks)	Wetla	Secondary Indicate Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Type: Depth (inches): Remarks: Io hydric soil indicators observed. Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Caturation Present? Yes	No O n	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	ertebrates ulfide Odor Water Tab izospheres not tilled) Reduced I furface (C7 ain in Remain thes):	r (C1) le (C2) on Living R ron (C4)) arks)	Wetla	Secondary Indicate Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	cors (minimum of two required Cracks (B6) etated Concave Surface (B8) terns (B10) cospheres on Living Roots (C3) tilled) ows (C8) sible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)

US Army Corps of Engineers Great Plains - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - Middle	C	City/County:	Rosebud	Sampling Date: 11-Jul-19
Applicant/Owner: MDT			State	: MT Sampling Point: DP-1W
Investigator(s): Mark Traxler, Tanner Traxler		Section, To		
Landform (hillslope, terrace, etc.): Swale				convex, none): concave Slope: 0.0 % / 0.0 °
, , , , , , , , , , , , , , , , , , ,			(Concare, s	
Subregion (LRR): LRR G	Lat.: _46.			Long.: -106.842487
Soil Map Unit Name: <u>Harlem silty clay, 0 to 2 percent slopes, c</u>			<u> </u>	NWI classification: Not Mapped
re climatic/hydrologic conditions on the site typical for this ti	me of year?	? Yes	s • No C	
Are Vegetation , Soil , or Hydrology si	gnificantly	disturbed?	Are "N	lormal Circumstances" present? Yes 🌘 No 🔾
Are Vegetation , Soil , or Hydrology na	aturally pro	blematic?	(If nee	eded, explain any answers in Remarks.)
Summary of Findings - Attach site map sho	wing sa	mpling p	oint loc	ations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No				· · · · · · · · · · · · · · · · · · ·
Hydric Soil Present? Yes • No •			Sampled A	
Wetland Hydrology Present? Yes No		within	a Wetland	d? Yes No
Remarks:				_
Data point occurs in wetland depression immediately west o	f the vegeta	ation transect	ī.	
•	-			
			TMC Do	elen CD
VEGETATION - Use scientific names of plan	nts	DominantSpecies?	רייס תכן	gion: GP
Tree Stratum (Plot size: 30 Foot Radius)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
	_ % Cover 0		Status	Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
1. 2.				Hidt die ODL, FACW, OI FAC.
3.	0			Total Number of Dominant
4.	0			Species Across All Strata:3(B)
	0	= Total Co	ver	Percent of dominant Species
Sapling/Shrub Stratum (Plot size: 15 Foot Radius_)				That Are OBL, FACW, or FAC: 100.0% (A/B)
1	0			Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3		<u> </u>		OBL species <u>40</u> x 1 = <u>40</u>
4 5.	0 0			FACW species x 2 =40
J	0	= Total Co		FAC species $20 \times 3 = 60$
Herb Stratum (Plot size: 5 Foot Radius)		- 10tai C0	vei	FACU species $\frac{10}{10}$ x 4 = $\frac{40}{10}$
1. Eleocharis palustris	40	✓ 44.4%	OBL	UPL species $0 \times 5 = 0$
Hordeum jubatum	20	22.2%	FACW	Column Totals: <u>90</u> (A) <u>180</u> (B)
3. Rumex crispus	20	22.2%	FAC	Prevalence Index = B/A =2
4. Elymus repens	_10	11.1%	FACU	Hydrophytic Vegetation Indicators:
5	0			
6				1 - Rapid Test for Hydrophytic Vegetation
8.		0.0%		✓ 2 - Dominance Test is > 50% ✓ 3 - Prevalence Index is ≤3.0 ¹
9.	0 0	0.0%		
10.	0	0.0%		4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
	90	= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 Foot Radius)				Indicators of hydric soil and wetland hydrology must
1	0			be present.
2.	0			
	0	= Total Co	ver	Hydrophytic
% Bare Ground in Herb Stratum 10		- 10tai C0	vei	Vegetation Present? Yes No No
_10				Present:
Remarks:				
Hydrophytic vegetation dominant in depression.				

US Army Corps of Engineers

Soil Sampling Point: DP-1W

Profile Desc	ription: (Des	cribe to t	he depth n	eeded to documen	t the indi	cator or co	nfirm the	absence of indicators.)
Depth		Matrix			lox Featu		1 2	Tautuus Bananka
(inches)	Color (r		<u>%</u> _	Color (moist)	%	Tvpe 1	Loc ²	Texture Remarks
0-2	2.5Y	3/2	100					Clay Loam
2-20	10YR	4/1	95	10YR 5/8	5	D	M	Clay Loam
1Type: C=Co	ncentration. D	=Depletio	n. RM=Reduc	ced Matrix, CS=Cover	ed or Coat	ed Sand Gra	nins ² Loca	ation: PL=Pore Lining. M=Matrix
Hydric Soil	Indicators:	(Applicab	le to all LRI	Rs, unless otherwis	se noted.)		Indicators for Problematic Hydric Soils 3:
Histosol ((A1)			Sandy Gleyed	Matrix S4			1 cm Muck (A9) (LRR I, J)
Histic Epi	ipedon (A2)			Sandy Redox	. ,			Coastal Prairie Redox (A16) (LRR F, G, H)
Black His	. ,			Stripped Matri	. ,			Dark Surface (S7) (LRR G)
_ ′ -	n Sulfide (A4)	IDD E)		Loamy Mucky	-	-		High Plains Depressions (F16)
	Layers (A5) (l ck (A9) (LRR F			Loamy Gleyed✓ Depleted Mate	•	2)		(LRR H outside of MLRA 72 and 73)
	Below Dark S		1)	Redox Dark S)		Reduced Vertic (F18)
	rk Surface (A1	-	,	Depleted Dark				Red Parent Material (TF2)
	uck Mineral (Si	•		Redox depres	-	,		✓ Very Shallow Dark Surface (TF12)✓ Other (Explain in Remarks)
2.5 cm M	lucky Peat or F	Peat (S2) (l	RR G, H)	High Plains D	epressions	(F16)		³ Indicators of hydrophytic vegetation and wetland
5 cm Muc	cky Peat or Pea	at (S3) (LR	R F)	(MLRA 72	and 73 o	f LRR H)		hydrology must be present, unless disturbed or problematic.
Restrictive L	ayer (if pres	ent):						
Type:	, (p	,						
Depth (inc	ches):							Hydric Soil Present? Yes No
Remarks:	, .							•
Soil meets cr	iteria for a d	enleted m	natriv					
Son meets cr	itcha for a a	cpicted ii	idd ix.					
Hydrolog	y							
Wetland Hvo	drology Indic	cators:						Secondary Indicators (minimum of two required)
1			ne required	i; check all that ap	nlv)			Surface Soil Cracks (B6)
	Water (A1)		o . oqu o	Salt Crust (I				Sparsely Vegetated Concave Surface (B8)
	ter Table (A2)			Aquatic Inve	,	(B13)		Drainage Patterns (B10)
Saturation	, ,			Hydrogen S		` ,		Oxidized Rhizospheres on Living Roots (C3)
Water Ma				Dry Season				(where tilled)
	t Deposits (B2	!)		Oxidized Rh		` '	oots (C3)	Crayfish Burrows (C8)
☐ Drift dep	osits (B3)	•		(where	not tilled)	. ,	Saturation Visible on Aerial Imagery (C9)
Algal Ma	t or Crust (B4))		Presence of		-		Geomorphic Position (D2)
☐ Iron Dep	osits (B5)			Thin Muck S		. ,		FAC-neutral Test (D5)
Inundati	on Visible on A	Aerial Imag	erv (B7)	Other (Expla	•	•		Frost Heave Hummocks (D7) (LRR F)
	tained Leaves	-	, , ,			u)		
Field Observ		(23)						
Surface Water		Yes (O No €	Depth (inc	hes).			
		Yes (_ 	_		-	
Water Table P				(thes):		Wetl	and Hydrology Present? Yes No
Saturation Pre (includes capi		Yes (O No 🗨	Depth (inc	ches):		_	and Hydrology Frederic.
		(stream o	gauge, mon	itor well, aerial pho	otos, prev	ious inspe	ctions), if	available:
				,	, , , , , , ,		- //	
Remarks:								
	dary indicato	nrs nresen	t Soil mois	t to surface				
111100 300011	aary maicato	, o preser	5011 111015	e to surface.				

US Army Corps of Engineers Great Plains - Version 2.0

MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	Project Name: Forsyth NW - Middle 2. MDT Project #: STPP 14-6(9)259 3. Control #: 4059								
3.	Evaluation Date: 7/11/19 4. Evaluator(s): M. Traxler, T. Traxler 5. Wetland/Site #(s): Forsyth NW - Middle								
6.	Wetland Location(s): Township 7 N, Range 39 E, Section 33; Township 7 N, Range 39 E, Section 34								
	Approximate Stationing or F	Roadposts: ~262 on US 12							
	Watershed: 14 - Middle Yell	owstone County: _ Rosebud	-						
7.	Evaluating Agency: RESPEC Purpose of Evaluation: Wetland potentially affect Mitigation wetlands; pro Mitigation wetlands; po Other	ected by MDT project e-construction	, ,	: (visually estimated) 0.58 (measured, e.g. GPS) AA) Size (acre): (visuall rmining AA) 0.58 (measured)					
10	. CLASSIFICATION OF WET	LAND AND AQUATIC HABITA	ATS IN AA (See manual for def	initions.)					
	HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% OF AA				
	Depressional	Emergent Wetland	Excavated	Seasonal / Intermittent	100				
					I				

Comments:

11. ESTIMATED RELATIVE ABUNDANCE (of similarly classified sites within the same Major Montana Watershed Basin; see manual.) abundant

12. GENERAL CONDITION OF AA

i. Disturbance: Use matrix below to select the appropriate response; see manual for Montana listed noxious weed and aquatic nuisance vegetation species lists.

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

Comments (types of disturbance, intensity, season, etc.): AA vegetation recovering from construction disturbance.

- ii. Prominent noxious, aquatic nuisance, and other exotic vegetation species: All noxious weeds have decreased: Cirsium arvense and Tamarix spp. still persist
- iii. Provide brief descriptive summary of AA and surrounding land use/habitat: AA very similar to Forsyth NW East, only smaller. AA includes a linear, excavated roadside depression parallel to US 12. Surrounding land includes agriculture (grazing) and highway.
- 13. STRUCTURAL DIVERSITY (Based on number of "Cowardin" vegetated classes present [do not include unvegetated classes]; see #10 above.)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management peristence of additional v	Modified Rating	
≥3 (or 2 if one is forested) classes		NA	NA	NA
2 (or 1 if forested) classes		NA	NA	NA
1 class, but not a monoculture	mod	←NO	YES→	
1 class, monoculture (1 species comprises ≥90% of total cover)		NA	NA	NA

Comments: Emergent veg class present. Several cottonwood seedlings present in herbaceous layer.

Wetland/Site #(s): Forsyth NW - Middle 4A. HABITAT FOR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED PLANTS OR ANIMALS																				
14A. HABITAT FOR FEDERA	LLY LIS	STED	OR F	ROP	OSED	THRI	EATEN	IED (OR E	NDANG	ERED	PLA	NTS C	R AN	IMALS	S				
i. AA is Documented (D) or S Primary or critical habitat (lis Secondary habitat (list spec Incidental habitat (list specie No usable habitat	t specie ies) es)	es)			S S S															
ii. Rating: Based on the strong						_										_				
Highest Habitat Level	Doc/P	rima	ry S	Sus/P	rimary	/ Do	oc/Sec	onda	ary	Sus/Se	conda	ary	Doc/li	ncider	ntal	Sus	/Incide	ental	Non	е
Functional Point/Rating	-		L		·			<u> </u>											0L	
Sources for documented use 14B. HABITAT FOR PLANTS Do not include species lis	OR AN	IIMAL	S RA									-	HERIT	AGE I	PROG	RAM				
AA is Documented (D) or Suspected (S) to contain: Check box based on definitions in manual. Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species) No usable habitat Check box based on definitions in manual. Scarlet Ammannia - Ammannia robusta (S2) Great Blue Heron (S3) S SCARLET AMMANNIA - SCAR																				
Rating: Based on the strongest habitat chosen in 14A(i) above, select the corresponding functional point and rating.															_					
Highest Habitat Level																				
S1 Species	-			_				-												
Functional Point/Rating S2 and S3 Species						+														-
Functional Point/Rating	.9.	9H		-				-												
Sources for documented use	(e.g. ob	oserv	ations	, reco	ords): <u>N</u>	/TNH	P SOC	repo	ort for	T7N R	39E, di	rect o	bserva	ation o	f Amn	nanni	a in 20	<u>13.</u>		
14C. GENERAL WILDLIFE HA	ΔRITΔT	·RΔT	ING																	
i. Evidence of Overall Wildlife			_	O I	l l (C-1														
□ Substantial: Based on any □ observations of abundan □ abundant wildlife sign su □ presence of extremely lir □ interview with local biological	t wildlife ch as so niting ha	e #s c cat, tr abitat	or high acks, featu	spec nest res no	structu ot avail	res, g	àme tra	ails, e	etc.	,	⊠ f ⊠ l □ s	ew o ittle to spars	r no wi o no wi e adjad	Idlife o Idlife s ent up	bserva sign bland f	ations food s	sources	g peak	k]. use po	
☐ Moderate: Based on any of ☐ observations of scattered ☐ common occurrence of w ☐ adequate adjacent uplan ☐ interview with local biolog	l wildlife vildlife si d food s	groui ign su source	ips or uch as es	indivi scat	, tracks							perio	ds							
ii. Wildlife Habitat Features:	Working	g from	top to	o bott	om, ch	eck a	ppropri	ate A	AA att	ributes	in matı	rix to	arrive	at ratir	ng. Sti	ructu	ral dive	rsity is	from #	#13.
For class cover to be considered																	h other	in teri	ms of tl	heir
percent composition of the AA $S/I = seasonal/intermittent; T/E$																				
Structural Diversity	1	orary.	орног		High	<u> </u>	00111 [0	00 111	I	110111			derate		<u> </u>				OW/	
(see #13) Class Cover Distribution		E	ven			☐ Un	even			⊠ E		7 IAIO		Un	even					
(all vegetated classes) Duration of Surface	D/D	0,1			D/D				L				D/D	0."		Τ.		0.0		
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	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
□ Low Disturbance at AA																				
(see #12i) Moderate Disturbance																				
at AA (see #12i)	H																			
☐ High Disturbance at																				
AA (see #12i)																<u> </u>				
iii. Rating: Use the conclusion	ns from	i and	ii abo	ve an	nd the n	natrix	below	to se	elect t	he func	tional r	ooint	and rat	ing.						
Evidence of Wildlife Use										es Rati										
(i)		Exc	ceptio	nal		\boxtimes	High			<u></u>	oderat	<u>e</u>		☐ Lo	w					
☐ Substantial																_				
☐ Moderate					1				1				1							

Minimal Comments: Very few signs of wildlife observed during field survey. This area is close to the roadway and will likely never achieve a high wildlife habitat rating.

.4M

Wetland/Site #(s): Forsyth NW - Middle

14D.	GENERAL FISH HABITAT NA (proceed to 14E) 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 the NA box and proceed to 14E.
	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].
	Type of Fishery: Cold Water (CW) Warm Water (WW) Use the CW or WW guidelines in the manual to complete the matrix.

i. Habitat Quality and Known / Suspected Fish Species in AA: Use matrix to select the functional point and rating.

Duration of Surface Water in AA	□Р€	erman	ent / P	erenn	ial		☐ Seasonal / Intermittent							☐ Temporary / Ephemeral					
Aquatic Hiding / Resting / Escape Cover	Optimal		Adequate		□ Poor		Opti	☐ Optimal		Adequate		☐ Poor		timal	Adequate		Poor		
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																			
FWP Tier II or Native Game fish species																			
FWP Tier III or Introduced Game fish																			
FWP Non-Game Tier IV or No fish species																	-		

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

ii.	Modified Rating:	NOTE: Modified score cannot exceed 1.0 or be less than 0.1	1

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

YES, reduce score in **i** by 0.1 = ___ or N0

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area; specify in comments) for native fish or introduced game fish?

YES, add to score in i or iia 0.1 = ___ or

N0

:::	Final Score and Rating:	Comments:
	rillal Scole allu Natiliy.	Comments.

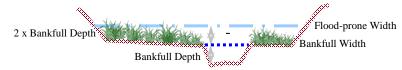
14E. FLOOD ATTENUATION MA (proceed to 14F)

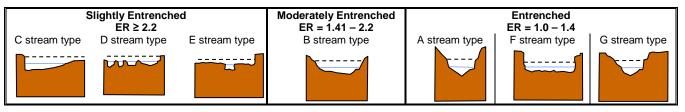
Applies only to wetlands that are subject to flooding via in-channel or overbank flow.

If wetlands in AA are not flooded from in-channel or overbank flow, check the NA box and proceed to 14F.

Entrenchment Ratio (ER) Estimation (see manual for additional guidance). Entrenchment ratio = (flood-prone width) / (bankfull width). Flood-prone width = estimated horizontal projection of where 2 X maximum bankfull depth elevation intersects the floodplain on each side of the stream.

flood prone width / bankfull width = entrenchment ratio





i. Rating: Working from top to bottom, use the matrix below to select the functional point and rating.

Estimated or Calculated Entrenchment	☐ SI	ightly Entre	nched	☐ Mod	lerately Enti	renched	☐ Entrenched			
(Rosgen 1994, 1996)	C, D	, E stream t	ypes	Е	stream typ	e	A, F, G stream types			
Percent of Flooded Wetland Classified as										
Forested and/or Scrub/Shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	
AA contains no outlet or restricted outlet										
AA contains unrestricted outlet										

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA? ☐ YES ☐ NO Comments: AA not subject to flooding from Big Porcupine Creek.

Wetland/Site #(s): Forsyth NW - Middle

14F. SHORT AND LONG TERM SURFACE WATER STORAGE	■ NA (proceed to 140
--	----------------------

Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, then check the NA box and proceed to 14G.

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

Estimated Maximum Acre Feet of Water Contained in Wetlands within the AA that are Subject to Periodic Flooding or Ponding		>5 acre fe	eet	□ 1.1	to 5 ac	re 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								.3L		
Wetlands in AA flood or pond < 5 out of 10 years										

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

Applies to wetland with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, check the NA box and proceed to 14H.

i. Rating: Working from top to bottom, use the matrix below to select the functional point and rating.

Sediment, Nutrient, and Toxicant Input Levels within AA	AA receive has potent nutrients, such that a substantia sedimenta toxicants, present.	tial to deliv or compou other funct illy impaire tion, sourc	er sedime inds at lev ions are n d. Minor es of nutr	nts, els ot ients or	Waterbody is need of TMDI causes" relat toxicants or A has potential nutrients, or c functions are sedimentation or signs of eu	developmer ed to sedime AA receives of to deliver hig compounds s substantially n, sources of	nt for "probal nt, nutrients, or surroundin gh levels of s such that oth y impaired. M nutrients or	ole or g land use ediments, er ajor	
% Cover of Wetland Vegetation in AA	⊠≥`	70%	□ <	70%	□≥7	70%	□ < 70%		
Evidence of Flooding / Ponding in AA	☐ Yes	⊠ No	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No	
AA contains no or restricted outlet		.8H							
AA contains unrestricted outlet									

Comments: AA more than 70% vegetated. Only minor impairment from highway and overland runnoff

14H. SEDIMENT / SHORELINE STABILIZATION

NA (proceed to 14I)

Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action.

If 14H does not apply, check the NA box and proceed to 14I.

% Cover of Wetland Streambank or Shoreline by Species with Stability	Duration of S	Duration of Surface Water Adjacent to Rooted Vegetation									
Ratings of ≥6 (see Appendix F).	☐ Permanent / Perennial	☐ Seasonal / Intermittent	☐ Temporary / Ephemeral								
□ ≥ 65%											
□ 35-64%											
□ < 35%											

Comments:

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

i. Level of Biological Activity: Synthesis of wildlife and fish habitat rates (select).

General Fish Habitat Rating	Genera	General Wildlife Habitat Rating (14Ciii)									
(14Diii)	☐ E/H	⊠ M	_ L								
☐ E/H											
■ M											
L											
⊠ NA		M									

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

Α		Vegeta	ted Co	mponent	t >5 ac	res	\boxtimes	Vegeta	ated Co	mponent	1-5 ac	☐ Vegetated Component <1 acre						
В	B 🔲 High				☐ Low		☐ High				☐ Low		☐ High		■ Moderate		☐ Low	
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P																		
S/I										.3L								
T/E/A																		

				Wetland	/Site #(s)	: Forsyth NW	- Middle			
14	II. PRODUCTION EXPORT / FOOD CH	AIN SUI	PPORT (contir		,	-				
iii.	. Modified Rating: Note: Modified score	e cannot	t exceed 1.0 o	r be less than	0.1.					
	Vegetated Upland Buffer: Area with a mowing or clearing (unless for weed colls there an average ≥ 50-foot wide vegetation)	ontrol).	•					•	·	
iv.	. Final Score and Rating: <u>.3L</u> Commo	ents:				·				
	AJ. GROUNDWATER DISCHARGE / RE Check the appropriate indicators in i i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known o Vegetation growing during dor Wetland occurs at the toe of a Seeps are present at the wetla AA permanently flooded durin Wetland contains an outlet, bu	r observement see natural and edg g drought no inle	ved. eason/drought. slope. e. ht periods. et.		☐ Perr ☐ Wet ☐ Stre	land contains	s ate present wit inlet but no ou n 'losing' streal	tlet.		
	☐ Shallow water table and the si☐ Other:	ite is sat	turated to the s	surface.						
iii.	. Rating: Use the information from i and	l ii abov	e and the table	e below to sele	ct the fur	ctional point a	and rating.			
Ī	- ramige eee me memaalem em rame		Duration of S	Saturation at A	AA Wetla	nds <i>FROM G</i>	ROUNDWAT			1
	Outtoute			ATER THAT I			GROUNDWA			
ļ	Criteria Groundwater Discharge or Recha	rae	☐ P/P	S	/1	T	<u> </u>	□ No	ne	4
ŀ	☐ Groundwater Discharge or Recha	rge				NA				4
C/	omments: AA w/out permeable substrate	holds	surface water	eventually lost	to evano					1
	4K. UNIQUENESS Rating: Working from top to bottom, use	e the ma	atrix below to s	select the funct	ional poi	nt and rating.				
	Replacement Potential	spring foreste	ntains fen, bo is or mature (; ed wetland Of iation listed a: FNHP	>80 yr-old) ⋜ plant	cited ra diversi contair	es not contain are types ANE ty (#13) is hig ns plant asso ns "S2" by the	structural h OR ciation	previou associa	es not containusly cited rareations AND sty (#13) is low	e types OR structural
		□ Rare	□ Common	□ Abundant	☐ Rare	□ Common	☐ Abundant	□ Rare	□ Common	
	Low Disturbance at AA (#12i)									
	Moderate Disturbance at AA (#12i)									.2L
	☐ High Disturbance at AA (#12i) omments: Habitat within AA typical of roa									
14	Affords 'bonus' points if AA provides a list the AA a known or potential recreat	NTIAL a recrea	⊠ lational or educ		nity.	_				
ii.	Check categories that apply to the A	A : E	ducational/Sci	entific Study	, 3				Imptive recrea	ational
	. Rating: Use the matrix below to select	the fund	ctional point ar							
	. Rating: Use the matrix below to select Known or Pe				al Area			Known	Potential	ī
	Known or Po	otential	Recreational	or Education		n required)		Known	Potential	
		otential t with g	Recreational eneral public	or Education	ermissio	n required)		Known 		
	Known or Po Public ownership or public easement	otential t with g c acces	Recreational eneral public ss (no permiss	or Education access (no posion required)	ermissio		c access	 		
Co	Known or Po Public ownership or public easement Private ownership with general public	otential t with g c acces general	Recreational eneral public ss (no permiss public acces	or Education access (no posion required) s, or requiring	ermissio permis	sion for publi	c access			

15. GENERAL SITE NOTES: _____

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	low 0.00	1.00	0		
B. MT Natural Heritage Program Species Habitat	high 0.90	1.00	0.52	*	
C. General Wildlife Habitat	mod 0.40	1.00	0.23	*	
D. General Fish Habitat	NA	NA	0		
E. Flood Attenuation	NA	1.00	0		
F. Short and Long Term Surface Water Storage	low 0.30	1.00	0.17	*	
G. Sediment / Nutrient / Toxicant Removal	high 0.80	1.00	0.46	*	
H. Sediment / Shoreline Stabilization	NA	NA	0		
I. Production Export / Food Chain Support	low 0.30	1.00	0.17		
J. Groundwater Discharge / Recharge	NA	NA	0		
K. Uniqueness	low 0.20	1.00	0.12		
L. Recreation / Education Potential (bonus point)	NA		0		
Total Points	2.9	8	1.67 Total	Functional Units	
Percent of Possible Score 36% (round to nearest whole number)					

	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 #).
	The recent of possible score > 65 % (round to flearest 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; if not 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 #).
Į	
0	OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.

RESPEC / MDT WETLAND MITIGATION SITE MONITORING FORM

Assessment Date: <u>J</u> <u>Traxler</u> Location: ~8 miles: Milepost: ~2 Legal Description: Weather Conditions Initial Evaluation D Size of evaluation a	NW of Fo 262.3 on U T <u>7N</u> s: 80 degree Date: <u>Augu</u>	orsyth US 12 R 39E Sees, sunny st 15, 2013	ection <u>34</u> Monit	Project Number: n(s) conducting the MDT District: C Time of Day: 11 oring Year: 7 # ounding wetland:	e assessment Glendive :00 AM-12: Visits in Ye	:30 PM ear: <u>1</u>
			YDROLOG			·
Surface Water Sour Inundation: Absent Percent of assessment Depth at emergent of If assessment area is Other evidence of higeomorphic position. Groundwater Monit Percent depth at the force of the state of the sta	ent area un vegetation s not inund ydrology o on, surfac toring Wel	Average Depth: 9 der inundation: 9 der inundation: 9 depen water boundated then are the on the site (ex. – 6 de soil cracks	0 feet Range % dary: 0 feet soils satura drift lines, e	of Depths: 0 ted within 12 inch		
Record depth of war	Depth	well Number	n feet): Depth	Well Number	Depth	
			-		-	

VEGETATION COMMUNITIES

Community Number: 2 Community Title (main spp): Rumex crispus/Eleopcharis palustris

Dominant Species	% Cover	Dominant Species	% Cover
Eleocharis palustris	4 = 21-50%	Taraxacum officinalis	1 = 1-5%
Bare Ground	2 = 6-10%	Broumus arvensis	1 = 1-5%
Alopecurus pratensis	1 = 1-5%	Pascopyrum smithii	2 = 6-10%
Hordeum jubatum	1 = 1-5%	Rumex crispus	1 = 1-5%
Poa pratensis	1 = 1-5%	Tragopogon dubius	1 = 1-5%
Schoenoplectus maritimus	1 = 1-5%	Elymus repens	1 = 1-5%

Comments / Problems: This community type has been replaced by CT4 but was left in the monitoring form for reference purposes only.

Community Number: 3 Community Title (main spp): Pascopyrum smithii / Elymus spp.

Dominant Species	% Cover	Dominant Species	% Cover
Pascopyrum smithii	5 = > 50%	Ambrosia psilostachya	1 = 1-5%
Elymus canadensis	1 = 1-5%	Bare Ground	1 = 1-5%
Elymus trachycaulus	3 = 11-20%	Chenopodium album	1 = 1-5%
Bromus arvensis	1 = 1-5%	Elymus repens	1 = 1-5%
Alopecurus arundinaceus	1 = 1-5%	Lactuca serriola	1 = 1-5%
Agropyron cristatum	1 = 1-5%	Linum lewisii	1 = 1-5%

Comments / Problems:

Community Number: 4 Community Title (main spp): Hordeum jubatum/Eleocharis palustris

Dominant Species	% Cover	Dominant Species	% Cover
Eleocharis palustris	4 = 21-50%	Populus deltoides	+ = < 1%
Bare Ground	1 = 1-5%	Salix fragilis	+ = < 1%
Alopecurus pratensis	2 = 6-10%	Pascopyrum smithii	2 = 6-10%
Hordeum jubatum	2 = 6-10%	Rumex crispus	+ = < 1%
Poa pratensis	1 = 1-5%	Spartina pectinata	2 = 6-10%
Schoenoplectus maritimus	2 = 6-10%	Elymus repens	1 = 1-5%

Comments / Problems: Tamarix ramosissima (<1); Convolvulus arvensis (<1)

Community Number: ___ Community Title (main spp): ____

Dominant Species	% Cover	Dominant Species	% Cover
			-

Comments / Problems: _____

PLANTED WOODY VEGETATION SURVIVAL

Plant Species	Number Originally Planted	Number Observed	Mortality Causes

Comments / Problems: No planted woody vegetation.

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW - East Date: July 11, 2019 Examiner: M. Traxler, T. Traxler

Transect Number: 1 Approximate Transect Length: 125 feet Compass Direction from Start: 145° Note:

Transect Interval Length: 32 feet (station 0-32)							
Vegetation Community Type: Pascopyrum smithii/Elymus spp.							
Plant Species	Cover						
Lactuca serriola	1 = 1-5%						
Pascopyrum smithii	5 = > 50%						
Bromus tectorum	2 = 6-10%						
Melilotus officinale	2 = 6-10%						
Helianthus annus	+ = < 1%						
Populus deltoides	+ = < 1%						
Rumex crispus	1 = 1-5%						
Total Vegetative Cover	: 90%						

Transect Interval Length: 65 feet (station 32-97)						
Vegetation Community Type: Hordeum jubatum/Eleocharis palustris						
Plant Species	Cover					
Eleocharis palustris	5 = > 50%					
Alopecurus arundinaceus	4 = 21-50%					
Elymus repens	1 = 1-5%					
Hordeum jubatum	1 = 1-5%					
Schoenoplectus maritimus	+ = < 1%					
Tamarix ramosissima	1 = 1-5%					
bare ground	1 = 1-5%					
Rumex crispus	1 = 1-5%					
Total Vegetative Cover:	95%					

Transect Interval Length: 28 feet (station 97-125)	
Vegetation Community Type: Pascopyrum smithii/Elymus spp	
Plant Species	Cover
Elymus trachycaulus	1 = 1-5%
Pascopyrum smithii	2 = 6-10%
Melilotus officinale	5 = > 50%
Chenopodium album	1 = 1-5%
Alopecurus arundinaceus	1 = 1-5%
Bromus tectorum	2 = 6-10%
Poa compressa	1 = 1-5%
Total Vegetative Cover:	100%

Transect Interval Length:	
Vegetation Community Type:	
Plant Species	Cover
Total Vegetative Cover:	%

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW - East Date: July 11, 2019 Examiner: M. Traxler, T. Traxler

Transect Number: 2 Approximate Transect Length: 181 feet Compass Direction from Start: 280° Note:

Transect Interval Length: 30 feet (station 0-30)				
Vegetation Community Type: Pascopyrum smithii / Elymus spp.				
Plant Species	Cover			
Elymus tracycaulus	4 = 21-50%			
Melilotus officinale	3 = 11-20%			
Bare Ground	1 = 1-5%			
Hordeum jubatum	2 = 6-10%			
Pascopyrum smithii	4 = 21-50%			
Convolvulus arvensis	1 = 1-5%			
Rumex crispus	1 = 1-5%			
Total Vegetative Cover:	95%			

Transect Interval Length: 100 feet (station 30-130)			
Vegetation Community Type: Hordeum jubatum / Eleocharis palustris			
Plant Species	Cover		
Eleocharis palustris	4 = 21-50%		
Schedonorus pratensis	2 = 6-10%		
Helianthus annus	1 = 1-5%		
Poa compressa	1 = 1-5%		
Bare ground	1 = 1-5%		
Hordeum jubatum	5 = > 50%		
Pascopyrum smithii	1 = 1-5%		
Salix fragilis	1 = 1-5%		
Alopecurus arundinaceus	1 = 1-5%		
Rumex crispus	2 = 6-10%		
Total Vegetative Cover:	98%		

Transect Interval Length: 51 feet (station 130-181)				
Vegetation Community Type: Pascopyrum smithii / Elymus spp.				
Plant Species	Cover			
Pascopyrum smithii	5 = > 50%			
Rumex crispus	1 = 1-5%			
Linum lewisii	1 = 1-5%			
Bare Ground	1 = 1-5%			
Lepidium perfoliatum	1 = 1-5%			
Helianthus anuus	1 = 1-5%			
Medicago sativa	+ = < 1%			
Melilotus officinale	4 = 21-50%			
Total Vegetative Cover:	98%			

Transect Interval Length:	
Vegetation Community Type:	
Plant Species	Cover
Total Vegetative Cover:	%

MDT WETLAND MONITORING - VEGETATION TRANSECT

Cover Estima	te	Indicator Class	Source
+ = < 1%	3 = 11-10%	+ = Obligate	P = Planted
1 = 1-5%	4 = 21-50%	- = Facultative/Wet	V = Volunteer
2 = 6-10%	5 = > 50%	0 = Facultative	

Percent of perimeter developing wetland vegetation (excluding dam/berm structures): %

Establish transects perpendicular to the shoreline (or saturated perimeter). The transect should begin in the upland area. Permanently mark this location with a standard metal fencepost. Extend the imaginary transect line towards the center of the wetland, ending at the 3 foot depth (in open water), or at the point where water depths or saturation are maximized. Mark this location with another metal fencepost.

Estimate cover within a 10 foot wide "belt" along the transect length. At a minimum, establish a transect at the windward and leeward sides of the wetland. Remember that the purpose of this sampling is to monitor, not inventory, representative portions of the wetland site.

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.

hotograph 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.

Location	Photograph Frame #	Photograph Description & Lat/Long	Compass Reading (°)
PP-1		Photo Point 1: 46.321003 / -106.838814	125
PP-2		Photo Point 2: 46.320068 / -106.837128	210
PP-3		Photo Point 3: 46.318233 / -106.834335	305
T-1 start		Transect 1 start: 46.321045 / -106.838486	145
T-1 end		Transect 1 end: 46.320297 / -106.838493	325
T-2 start		Transect 2 start: 46.318336 / -106.834175	280
T-2 end		Transect 2 end: 46.318417 / -106.834923	100
DP-1W		Wetland soil pit #1: 46.320943 / -106.838674	
DP-1U		Upland soil pit #1: 46.320920 / -106.838707	
DP-2W		Wetland soil pit #1: 46.318503 / -106.834643	
DP-2U		Upland soil pit #2: 46.318471 / -106.834693	

C	omment	ts/	Prol	bler	ns:		
---	--------	-----	------	------	-----	--	--

GPS SURVEYING

Using a resource grade GPS survey the items on the checklist below. Collect at least 3 location points set at a 5 second recording rate. Record file numbers for site in designated GPS field notebook.

 GPS Checklist: □ Upland/wetland boundary. □ 4-6 landmarks that are recognizable on the aerial photograph. □ Start and End points of vegetation transect(s). □ Photograph reference points. □ Groundwater monitoring well locations. □ Bird nest boxes.
Comments / Problems:
WETLAND DELINEATION (attach COE delineation forms)
At each site conduct these checklist items: Delineate wetlands according to the 1987 Army COE manual and regional supplement. Delineate wetland – upland boundary onto aerial photograph.
Comments / Problems:
FUNCTIONAL ASSESSMENT Complete and attach full MDT Montana Wetland Assessment Method field forms.
Comments / Problems:
MAINTENANCE
Were man-made nesting structure installed at this site? <u>No</u> If yes, do they need to be repaired? <u>NA</u> 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? <u>No</u> If yes, are the structures working properly and in good working order? <u>NA</u> If no, describe the problems below.
Comments / Problems: Middle section of project area remains upland.

WILDLIFE

Are the nesting structures being use Do the nesting structures need repa										
Mammals and Herptiles										
Mammal and Herptile Species	Number Observed	Tra	ıcks		ndir cat	ect Ir Bui		ation ws	se Other	
none observed									0 02202	
				Į						
		<u> </u>		┝			<u> </u>			
			1	Ļ	1					
		┝	=	┝	1		\dashv			
NA Macroinvertebrate Sampling (if required)	<u> </u>								
Macroinvertebrate Sampling (i	if required)	<u> </u>		<u> </u>		,		,		
Macroinvertebrate Sampling (if required)			, -						
NA Macroinvertebrate Sampling (if required)	<u>-</u>		, -						
Additional Activities Checklist: NA Macroinvertebrate Sampling (in the Comments / Problems:	if required)	<u> </u>								
NA Macroinvertebrate Sampling (if required)									
NA Macroinvertebrate Sampling (if required)									
NA Macroinvertebrate Sampling (i	if required)									
NA Macroinvertebrate Sampling (i	if required)									
NA Macroinvertebrate Sampling (if required)									
NA Macroinvertebrate Sampling (i	if required)									

B-55

BIRD SURVEY - FIELD DATA SHEET

Site: <u>Forsyth NW - East</u> Date: <u>7/11/19</u> Survey Time: <u>11:00</u> am to <u>12:30</u> pm

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
Eastern Kingbird	2	BP N	UP				
	+						
	-						
	1						
	+						
	1						
	-						
DELLA LUCE GODEG				HADITAT CODEC			

BEHAVIOR CODES

BP = One of a breeding pair **BD** = Breeding display

F = ForagingFO = FlyoverL = LoafingN = Nesting

Weather: sunny, 80 degrees

TA 1	otes:	
1	Otec.	
1.4	OLCO.	

HABITAT CODES

 $\begin{array}{lll} \textbf{AB} = & \textbf{Aquatic bed} & \textbf{SS} = & \textbf{Scrub/Shrub} \\ \textbf{FO} = & \textbf{Forested} & \textbf{UP} = & \textbf{Upland buffer} \\ \textbf{I} = & \textbf{Island} & \textbf{WM} = & \textbf{Wet meadow} \\ \textbf{MA} = & \textbf{Marsh} & \textbf{US} = & \textbf{Unconsolidated shore} \\ \end{array}$

MF = Mud Flat **OW** = Open Water

Forsyth NW – East Site Plant List (2013-2019)

Scientific Names	Common Names	GP Indicator Status ^(a)
Agropyron cristatum	Crested Wheatgrass	NL
Algae, green	Algae, green	NL
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	NL
Bassia scoparia	Mexican-Fireweed	FACU
Bromus carinatus	California Brome	NL
Bromus inermis	Smooth Brome	UPL
Bromus arvensis	Japanese Brome	NL
Bromus tectorum	Cheatgrass	NL
Chenopodium album	Lamb's-Quarters	FACU
Convolvulus arvensis	Field Bindweed	NL
Descurainia sophia	Herb Sophia	NL
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 trachycaulus	Slender Wild Rye	FACU
<i>Elymus</i> sp.	Wild Rye	NL
Filago arvensis	Field Fluffweed	NL
Glyceria elata	Tall Manna Grass	OBL
Grindelia squarrosa	Curly-Cup Gumweed	UPL
Helianthus annuus	Common Sunflower	FACU
Hesperostipa comata	Needle-and-Thread	NL
Hordeum jubatum	Fox-Tail Barley	FACW
Lactuca serriola	Prickly Lettuce	FAC
Lepidium perfoliatum	Clasping Pepperwort	FAC
Linum lewisii	Prairie Flax	NL
Medicago sativa	Alfalfa	UPL
Melilotus officinalis	Yellow Sweet-Clover	FACU
Muhlenbergia asperifolia	Alkali Muhly	FACW
Pascopyrum smithii	Western-Wheat Grass	FACU
Poa compessa	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	NL
Rumex acetosella	Common Sheep Sorrel	FAC
Rumex crispus	Curly Dock	FAC
Sagittaria cuneata	Arum-Leaf Arrowhead	OBL

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

⁽a) 2016 NWPL (Lichvar et al., 2016)

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - East		c	city/County:	Rosebud	Sa	ampling Date: 11-Jul-19
Applicant/Owner: MDT				State:	: MT Sampling Poi	int: DP-1U
Investigator(s): Mark Traxler, Tanner	Traxler		Section, To	wnship, Ra	nge: S 34 T 7N	R 39E
Landform (hillslope, terrace, etc.):	Shoulder slope		Local relief	(concave, o	convex, none): concave	Slope: 5.0 % / 2.9 °
- Subregion (LRR): LRR G		Lat.: 46.	.32092		Long.: -106.838707	Datum: WGS84
oil Map Unit Name: Harlem silty cla	v 0 to 2 nercent slones				NWI classification	on: PFM
e climatic/hydrologic conditions on				s • No		
Are Vegetation , Soil		significantly			ormal Circumstances" presen	
Are Vegetation , Soil ,		naturally pro			-	
Summary of Findings - At	_			•	eded, explain any answers in ations, transects, im	•
Hydrophytic Vegetation Present?	Yes O No 💿					<u> </u>
Hydric Soil Present?	Yes O No •			Sampled A		
Wetland Hydrology Present?	Yes O No •		withi	n a Wetland	_{1?} Yes O No 💿	
Remarks:	100 0 110 0					
Upland data point. Slope above we	tland.					
VEGETATION - Use scien	tific names of pl	ants	Dominant	FWS Re	gion: GP	
			Species? Rel.Strat.	Indicator	Dominance Test worksheet:	<u> </u>
Tree Stratum (Plot size: 30 Foot	t Radius)	% Cover		Status	Number of Dominant Species	
1					That are OBL, FACW, or FAC:	0(A)
2			<u> </u>		Total Number of Dominant	
3		0			Species Across All Strata:	(B)
4					Daniel of densire at Consis	_
Sapling/Shrub Stratum (Plot size:	15 Foot Radius \	0	= Total Co	over	Percent of dominant Species That Are OBL, FACW, or FA	0.00/ (1/5)
		0			. ,	
1 2.					Prevalence Index workshee	
2					Total % Cover of:	Multiply by:
4.					OBL species 0	
5.		0			FACW species 0 FAC species 5	
		0	= Total Co	ver	22	
Herb Stratum (Plot size: 5 Foot F	Radius)					
1		65	✓ 67.0%	FACU		
2. Elymus trachycaulus		25	✓ 25.8%	FACU	Column Totals: 97	(A) <u>383</u> (B)
		5	5.2%	FAC	Prevalence Index = B/A	\ = <u>3.948</u>
				FACU	Hydrophytic Vegetation Ind	icators:
5. 6.			0.0%		1 - Rapid Test for Hydro	onbytic Vegetation
7			0.0%		2 - Dominance Test is >	
8			0.0%		3 - Prevalence Index is	
9			0.0%			tations ¹ (Provide supporting
10.		0	0.0%		data in Remarks or or	
		97	= Total Co	over	Problematic Hydrophyt	ic Vegetation 1 (Explain)
Woody Vine Stratum (Plot size:	30 Foot Radius)				1 Indicators of hydric soil a	and wetland hydrology must
1		0			be present.	
2.		_				
			= Total Co	ver	Hydrophytic	
% Bare Ground in Herb Stratum	3		- 10tai CC	, vei	Vocatation	No 💿
	<u> </u>				Present? 105 ©	
Remarks:						
Slope well-vegetated, dominated b	y FACU species.					

US Army Corps of Engineers

Soil Sampling Point: DP-1U

Profile Description: (De	Matrix			lox Featu						
	(moist)	%	Color (moist)	%	Type 1	Loc2	Texture		R	temarks
0-20 2.5Y	3/3	100					Clay Loam			
							-			
										
1Type: C=Concentration.	•					ins ² Loca	ation: PL=Pore Lining	. M=Ma	trix	
Hydric Soil Indicators:	(Applicab	le to all LRR)		Indicators for I	Probler	natic Hydric	: Soils ³ :
Histosol (A1)			Sandy Gleyed				1 cm Muck (. , .		
Histic Epipedon (A2)			Sandy Redox	. ,					ox (A16) (LRR	F, G, H)
Black Histic (A3)			Stripped Matri	` '	1)		Dark Surface	, , ,	,	
Hydrogen Sulfide (A4)Stratified Layers (A5)			Loamy Mucky Loamy Gleyed				High Plains	-		1 70)
1 cm Muck (A9) (LRR	,		Depleted Matr	•	.)		_ `		of MLRA 72	ana /3)
Depleted Below Dark		1)	Redox Dark Si	. ,			Reduced Ve	•	•	
Thick Dark Surface (A	•		Depleted Dark	. ,			Red Parent		i (1F2) Surface (TF12	`
Sandy Muck Mineral (•		Redox depress	•	•		Other (Expla		•	,
2.5 cm Mucky Peat or	Peat (S2) (L	RR G, H)	High Plains De	epressions	(F16)		³ Indicators of hyd		•	and wetland
5 cm Mucky Peat or P	eat (S3) (LR	R F)	(MLRA 72	and 73 o	f LRR H)					turbed or problemat
Restrictive Layer (if pre	esent):									
, , ,										
Type:										
							Hydric Soil Prese	nt?	Yes 🔾	No •
Depth (inches):							Hydric Soil Prese	ent?	Yes O	No •
Depth (inches):Remarks:	absorted						Hydric Soil Prese	ent?	Yes O	No •
Depth (inches):	observed.						Hydric Soil Prese	ent?	Yes O	No •
Depth (inches):Remarks:	observed.						Hydric Soil Prese	ent?	Yes O	No •
Depth (inches): Remarks: lo hydric soil indicators	observed.						Hydric Soil Prese	ent?	Yes O	No •
Depth (inches): Remarks: o hydric soil indicators										
Depth (inches): Remarks: o hydric soil indicators ydrology Vetland Hydrology Ind	icators:	one required	check all that an	alv)			_Secondary 1	Indicat	ors (minimu	
Depth (inches): Remarks: o hydric soil indicators ydrology Vetland Hydrology Ind Primary Indicators (mir	icators:	one required					Secondary I	indicato e Soil C	ors (minimu racks (B6)	m of two required
Depth (inches): Remarks: o hydric soil indicators lydrology Vetland Hydrology Ind Primary Indicators (min Surface Water (A1)	icators: nimum of c	one required	Salt Crust (E	311)	(R13)		Secondary 1 Surfac	indicato e Soil C	ors (minimu racks (B6) tated Concav	
Depth (inches): Remarks: o hydric soil indicators Lydrology Vetland Hydrology Ind Primary Indicators (min Surface Water (A1) High Water Table (A2)	icators: nimum of c	one required	Salt Crust (E	311) ertebrates	. ,		Secondary I Surfac Sparse Draina	indicate e Soil C ely Vege ge Patte	ors (minimu racks (B6) tated Concav erns (B10)	m of two required e Surface (B8)
Depth (inches): Remarks: o hydric soil indicators Nydrology Vetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2) Saturation (A3)	icators: nimum of c	one required	Salt Crust (E Aquatic Inve	311) ertebrates ulfide Odoi	(C1)		Secondary I Surfac Sparse Draina Oxidiz	indicati e Soil C ely Vege ge Patti ed Rhizo	ors (minimu racks (B6) etated Concav erns (B10) ospheres on L	m of two required
Depth (inches): Remarks: o hydric soil indicators Nydrology Vetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	icators: nimum of c	one required	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season	311) ertebrates ulfide Odoi Water Tab	(C1) le (C2)	oots (C3)	Secondary I Surfac Sparse Draina Oxidiz	Indicative Soil Cely Vege ge Pattived Rhize	ors (minimu racks (B6) etated Concav erns (B10) ospheres on L	m of two required e Surface (B8)
Depth (inches): Remarks: o hydric soil indicators Iydrology Vetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B	icators: nimum of c	one required	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh	811) ertebrates ulfide Odoi Water Tab izospheres	(C1) le (C2) on Living R	oots (C3)	Secondary I Surfac Sparse Draina Oxidize (1) Crayfis	indicato e Soil C ely Vege ge Patt ed Rhizo where t sh Burro	ors (minimu racks (B6) tated Concaverns (B10) ospheres on L tilled)	m of two required e Surface (B8) iving Roots (C3)
Depth (inches): Remarks: o hydric soil indicators Iydrology Vetland Hydrology Ind Primary Indicators (min Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	icators: nimum of c	one required	Salt Crust (E Aquatic Inve Hydrogen Se Dry Season Oxidized Rh	B11) ertebrates ulfide Odor Water Tab izospheres not tilled	(C1) le (C2) on Living R	oots (C3)	Secondary I Surface Sparse Draina Oxidize (1) Crayfis	indicate e Soil C ely Vege ge Patte ed Rhize where t sh Burro	ors (minimu racks (B6) etated Concave erns (B10) ospheres on L tilled) ows (C8) ible on Aerial	m of two required e Surface (B8)
Depth (inches):	icators: nimum of c	one required	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary I Surface Sparse Draina Oxidize (Crayfis Satura Geome	indicate e Soil C ely Vege ge Patt ed Rhize where t sh Burro tion Vis	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial vosition (D2)	m of two required e Surface (B8) iving Roots (C3)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5)	icators: nimum of c		Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I urface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary I Surface Sparse Draina Oxidize (n) Crayfis Satura Geome	Endicate e Soil C ely Vege ge Patte ed Rhize where t sh Burro tion Vis prphic P eutral T	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial osition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on	icators: nimum of co		Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I urface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary I Surface Sparse Draina Oxidize (n) Crayfis Satura Geome	Endicate e Soil C ely Vege ge Patte ed Rhize where t sh Burro tion Vis prphic P eutral T	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial vosition (D2)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (min Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	icators: nimum of co		Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	B11) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I urface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary I Surface Sparse Draina Oxidize (n) Crayfis Satura Geome	Endicate e Soil C ely Vege ge Patte ed Rhize where t sh Burro tion Vis prphic P eutral T	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial osition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on Water-Stained Leaves	icators: nimum of c 2) 32) 4) Aerial Imag 5 (B9)	ery (B7)	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	st1) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I urface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary I Surface Sparse Draina Oxidize (n) Crayfis Satura Geome	Endicate e Soil C ely Vege ge Patte ed Rhize where t sh Burro tion Vis prphic P eutral T	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial osition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9)
Depth (inches):	icators: nimum of c 2) 4) Aerial Imag 5 (B9) Yes	ery (B7)	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S	st1) ertebrates ulfide Odor Water Tab izospheres not tilled Reduced I urface (C7	(C1) le (C2) on Living R ron (C4)	oots (C3)	Secondary I Surface Sparse Draina Oxidize (n) Crayfis Satura Geome	Endicate e Soil C ely Vege ge Patte ed Rhize where t sh Burro tion Vis prphic P eutral T	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial osition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9)
Depth (inches):	icators: nimum of c 2) 32) 4) Aerial Imag 5 (B9)	ery (B7)	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	811) ertebrates ulfide Odor Water Tab izospheres not tilled; Reduced I urface (C7 ain in Rema	(C1) le (C2) on Living R ron (C4)	-	Secondary I Surface Sparse Draina Oxidize (1) Crayfis Satura Geome	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) tible on Aerial dosition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9) 7) (LRR F)
Depth (inches):	icators: nimum of c 2) 32) 4) Aerial Imag 6 (B9) Yes (Yes (ery (B7) No • No •	Salt Crust (E Aquatic Inve Hydrogen St Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Explain	station and tilled in Remarks (C7) in Remarks (R8):	(C1) le (C2) on Living R ron (C4)	-	Secondary I Surface Sparse Draina Oxidize (n) Crayfis Satura Geome	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) iible on Aerial osition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	icators: nimum of control (2) (32) (4) (4) (5) (69) (69) (7) (7) (7) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	ery (B7) No No No No No No	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	st11) ertebrates ulfide Odor Water Tab izospheres not tilled; Reduced I urface (C7 ain in Remain hes):	r (C1) le (C2) on Living R ron (C4)) arks)	- Wetla	Secondary J Surface Sparse Draina Oxidiz Crayfis Satura Geome FAC-ne Frost H	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) tible on Aerial dosition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9) 7) (LRR F)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	icators: nimum of control (2) (32) (4) (4) (5) (69) (69) (7) (7) (7) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	ery (B7) No No No No No No	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	st11) ertebrates ulfide Odor Water Tab izospheres not tilled; Reduced I urface (C7 ain in Remain hes):	r (C1) le (C2) on Living R ron (C4)) arks)	- Wetla	Secondary J Surface Sparse Draina Oxidiz Crayfis Satura Geome FAC-ne Frost H	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) tible on Aerial dosition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9) 7) (LRR F)
Depth (inches): Remarks: No hydric soil indicators Hydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data	icators: nimum of control (2) (32) (4) (4) (5) (69) (69) (7) (7) (7) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	ery (B7) No No No No No No	Salt Crust (E Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	st11) ertebrates ulfide Odor Water Tab izospheres not tilled; Reduced I urface (C7 ain in Remain hes):	r (C1) le (C2) on Living R ron (C4)) arks)	- Wetla	Secondary J Surface Sparse Draina Oxidiz Crayfis Satura Geome FAC-ne Frost H	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) tible on Aerial dosition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9) 7) (LRR F)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present? Sourface Water Table Present? Sourface Water Present?	icators: nimum of control (2) (32) (4) (4) (5) (69) (69) (7) (7) (7) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	No ONO ONO ONO ONO ONO ONO ONO ONO ONO O	Salt Crust (E Aquatic Inve Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Explain) Depth (inc	st11) ertebrates ulfide Odor Water Tab izospheres not tilled) Reduced I urface (C7 ain in Remains): hes): hes):	r(C1) le (C2) on Living R ron (C4)) arks)	Wetla	Secondary] Surface Sparse Draina Oxidize (n) Crayfis Satura Geome FAC-ne Frost H	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) tible on Aerial dosition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9) 7) (LRR F)
Depth (inches): Remarks: Io hydric soil indicators Iydrology Wetland Hydrology Ind Primary Indicators (mir Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? Gaturation Present? Includes capillary fringe) Describe Recorded Data	icators: nimum of control (2) (32) (4) (4) (5) (69) (69) (7) (7) (7) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	No ONO ONO ONO ONO ONO ONO ONO ONO ONO O	Salt Crust (E Aquatic Inve Aquatic Inve Hydrogen Si Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Explain) Depth (inc	st11) ertebrates ulfide Odor Water Tab izospheres not tilled) Reduced I urface (C7 ain in Remains): hes): hes):	r(C1) le (C2) on Living R ron (C4)) arks)	Wetla	Secondary] Surface Sparse Draina Oxidize (n) Crayfis Satura Geome FAC-ne Frost H	indicative Soil College Pattreed Rhizon Where to the Burroution Vision Peutral Theave H	ors (minimu racks (B6) tated Concave erns (B10) ospheres on L tilled) ows (C8) tible on Aerial dosition (D2) est (D5)	m of two required e Surface (B8) iving Roots (C3) Imagery (C9) 7) (LRR F)

US Army Corps of Engineers Great Plains - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - East		City/County:	Rosebud		Samp	oling Date: <u>11-</u>	Jul-19
Applicant/Owner: MDT			State:	: MT .	Sampling Point:	DP-	· 1W
Investigator(s): Mark Traxler, Tanner Traxler		Section, To			T 7N	R 39E	
Landform (hillslope, terrace, etc.): Swale		Local relief	(concave, c	convex, none): CO	ncave	Slope: 0.0	%/ <u>0.0</u> °
Subregion (LRR): LRR G	 Lat.: 46	.320943		Long.: -106,83	8674	Datum:	
Soil Map Unit Name: Harlem silty clay, 0 to 2 percent					classification:		11000
re climatic/hydrologic conditions on the site typic			s • No C		olain in Remarks		
Are Vegetation , Soil , or Hydrol	_			ormal Circumstar		_	10 O
					-		10 =
Are Vegetation, Soil, or Hydrol			-	eded, explain any		-	
Summary of Findings - Attach site	map showing sa	mpling p	oint loc	ations, trans	sects, impo	rtant featu	ıres, etc.
	No O	Is the	Sampled A	irea			
•	No 🔾		-	_{i?} Yes 💿 No 🤇	\supset		
Wetland Hydrology Present? Yes Yes	No O	Withii	1 a Wetianu				
Remarks:							
Wetland data point.							
VEGETATION - Use scientific name	es of plants	Dominant	FWS Re	gion: GP			
		Species? Rel.Strat.	Indicator	Dominance Tes	t worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 Foot Radius</u>)	<u>% Cover</u>	Cover	Status	Number of Domin			
1		<u> </u>		That are OBL, FA	CW, or FAC:	1	(A)
2	0	<u> </u>		Total Number of I			
4.				Species Across All	l Strata:	1	(B)
		= Total Co	ver	Percent of dom		100.00/	(4/5)
Sapling/Shrub Stratum (Plot size: 15 Foot Radiu				That Are OBL, F	FACW, or FAC:	100.0%	(A/B)
1				Prevalence Inde	ex worksheet:		
2				Total % C	Cover of: M	fultiply by:	
3		<u> </u>		OBL species	82 x	1 = 82	_
4 5.		<u> </u>		FACW species		2 = <u>10</u>	
J.,		= Total Co		FAC species		(3 = <u>15</u>	
				FACU species	_	_	
1. Eleocharis palustris		✓ 87.0%	OBL	UPL species	-	<pre>< 5 = 0</pre>	
2. Rumex crispus		5.4%	FAC	Column Totals	s: <u>92</u> ((A) <u>107</u>	(B)
3. Hordeum jubatum		5.4%	FACW	Prevalence	Index = B/A =	1.163	
4. Schoenoplectus maritimus 5.		2.2%	OBL	Hydrophytic Veg	getation Indicat	ors:	
6.		0.0%		✓ 1 - Rapid To	est for Hydroph	vtic Vegetation	1
7.		0.0%		I	nce Test is > 50		·
8.		0.0%			nce Index is ≤3.		
9.	0	0.0%		4 - Morpho	logical Adaptation	ons ¹ (Provide s	supporting
10.	0	0.0%		data in Re	emarks or on a s	separate sheet)
	92	= Total Co	ver	Problemation	c Hydrophytic V	egetation ¹ (Exp	plain)
Woody Vine Stratum (Plot size: _30 Foot Radius	<u>s</u>)			Indicators of be present.	hydric soil and	wetland hydro	logy must
1				be present.			
2							
	0	= Total Co	ver	Hydrophytic Vegetation	· 🕝	\bigcirc	
% Bare Ground in Herb Stratum 8	_			Present?	Yes No	<u> </u>	
Remarks:							
Similar to 2018. Cottonwood saplings starting to	develop in wetland but	t none occur	within this	data point.			

US Army Corps of Engineers

Soil Sampling Point: DP-1W

	-	the depth ne				nfirm the	absence of indicators.)	
Depth (inches)	Matrix Color (moist)	<u>%</u>	Color (moist)	lox Featu _%	res Tvpe ¹	Loc ²	Texture	Remarks
0-20	2.5YR 3/2	90	2.5Y 4/4	10	С	PL	Clay	
							-	
			-					
1.Tunou C-Co	n contration D_Donlatio		ad Matrix CC—Cover	od or Coot	ad Cand Cra	ing 21 occ	tion, DI -Doro Lining M-Mate	
, · ·	ncentration. D=Depletion Indicators: (Application		·			IIIS -LOCA	tion: PL=Pore Lining. M=Matr Indicators for Problem	
Histosol		JIE LU AII LKK	Sandy Gleyed	-	,		1 cm Muck (A9) (LRF	
	ipedon (A2)		Sandy Gleyed Sandy Redox				Coastal Prairie Redox	• •
☐ Black His	. ,		Stripped Matri	. ,			Dark Surface (S7) (LI	
Hydroger	n Sulfide (A4)		Loamy Mucky	Mineral (F	1)		High Plains Depression	ons (F16)
	Layers (A5) (LRR F)		Loamy Gleyed	Matrix (F2	2)		(LRR H outside o	of MLRA 72 and 73)
	ck (A9) (LRR F,G,H)		Depleted Matr	. ,			Reduced Vertic (F18)	
_ ·	Below Dark Surface (A1	.1)	Redox Dark Su	٠,			Red Parent Material ((TF2)
	rk Surface (A12)		Depleted Dark Redox depress	,	F/)		Very Shallow Dark Su	,
_ `	uck Mineral (S1) lucky Peat or Peat (S2) (IDD C H)	High Plains De	. ,	(E16)		Other (Explain in Rer	•
	cky Peat or Peat (S3) (LF		(MLRA 72	•	• ,		³ Indicators of hydrophytic	vegetation and wetland t, unless disturbed or problematic
	ayer (if present):	,	(I I I I I I I I I I I I I I I I I I I	t, unless distarbed of problematic
Type:	ayer (ii present).							
Depth (inc	chac):						Hydric Soil Present?	Yes No
Remarks:								
	dox concentrations n	atad						
Prominent re	dox concentrations in	oteu.						
Hydrolog	У							
Wetland Hyd	drology Indicators:						Secondary Indicato	rs (minimum of two required)
•	icators (minimum of	one required:	: check all that ap	olv)			Surface Soil Cra	
	Water (A1)	,	Salt Crust (E					ated Concave Surface (B8)
_	ter Table (A2)		Aquatic Inve	•	(B13)		Drainage Patte	` '
✓ Saturation	` '		Hydrogen Su		` '			spheres on Living Roots (C3)
	arks (B1)		Dry Season				(where til	
	t Deposits (B2)		Oxidized Rh		. ,	oots (C3)	Crayfish Burrov	=
	osits (B3)			not tilled	_	, ,		ole on Aerial Imagery (C9)
Algal Ma	t or Crust (B4)		Presence of	-	-		✓ Geomorphic Po	
Iron Dep	oosits (B5)		Thin Muck S		` ,		✓ FAC-neutral Te	• •
✓ Inundati	on Visible on Aerial Imag	gery (B7)	Other (Expla	-	-			ımmocks (D7) (LRR F)
	tained Leaves (B9)	, , ,			-			,,,,,
Field Observ								
Surface Water		○ No •	Depth (inc	hes):				
Water Table F		○ No ●		_				
Saturation Pre			Depth (inc	nes):		Wetla	and Hydrology Present?	Yes No
(includes capi	VAC 1	● No ○	Depth (inc	hes):	0			
Describe Re	corded Data (stream	gauge, monit	or well, aerial pho	otos, prev	ious inspe	ctions), if	available:	
Remarks:								
Soil saturate	ed to the surface due	to recent pre	cipitation.					
		-						

US Army Corps of Engineers Great Plains - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - East		City/County:	Rosebud		Samp	ling Date: 11	-Jul-19
Applicant/Owner: MDT			State:	:_MT Sa	mpling Point:	DP	-2U
investigator(s): Mark Traxler, Tanner Traxler		Section, To	wnship, Ra	nge: S 34	T _7N	R 39E	_
Landform (hillslope, terrace, etc.): Shoulder slop	oe .	Local relief	(concave, c	convex, none): con	cave	Slope: 5.0	0 % / 2.9 °
Gubregion (LRR): LRR G	Lat.: 46	.318471		Long.: -106.8346	593	Datum:	WGS84
oil Map Unit Name: Harlem silty clay, 0 to 2 perc				E	lassification:	 Not Manned	
e climatic/hydrologic conditions on the site typi			. ● No C		in in Remarks		
Are Vegetation , Soil , or Hydro	_		Are "N	ormal Circumstanc		•	No O
Are Vegetation , Soil , or Hydro					•		
Summary of Findings - Attach site			•	eded, explain any a ations. transe		-	ures. etc.
	No •						
	No •		Sampled A				
	No •	within	a Wetland	_{I?} Yes 🔾 No 💿			
Remarks:	<u> </u>						
Upland data point.							
			=1.4.C.D				
VEGETATION - Use scientific nam	es of plants	Dominant Species?	FWS Re	gion: GP			
		Rel.Strat.	Indicator	Dominance Test	worksheet:		
1	_ % Cover 0	Cover	Status	Number of Domina That are OBL, FAC		0	(4)
2				mat are Obt, FAC	V, OI FAC:	0	_ (A)
3.	0			Total Number of Do		1	(D)
4.	0			Species Across All S	ыгаца:	1_	_ (B)
		= Total Co	ver	Percent of domin		0.00/	(A (D)
Sapling/Shrub Stratum (Plot size: 15 Foot Radio				That Are OBL, FA	CW, or FAC:	0.0%_	(A/B)
1	0			Prevalence Index	worksheet:		
2				Total % Co	ver of: M	lultiply by:	
3				OBL species	0x	1 = 0	
4 5.				FACW species	5 x	2 = 10)
J		= Total Co		FAC species		3 =	_
<u>Herb Stratum</u> (Plot size: 5 Foot Radius)		- 10tai C0	vei	FACU species		4 = <u>34</u>	
1 M-81-1	75	✓ 76.5%	FACU	UPL species	x	5 = <u>15</u>	5
Pascopyrum smithii		10.2%	FACU	Column Totals:	98((A) <u>38</u>	<u>(B)</u>
3. Alopecurus arundinaceus		5.1%	FACW	Prevalence I	ndex = B/A =	3.878	_
4. Rumex crispus	_	5.1%	FAC	Hydrophytic Vege	tation Indicat	ors:	
5. Medicago sativa	3	3.1%	UPL				
6. 7.		0.0%			t for Hydrophy		n
8		0.0%		=	ce Test is > 50 ce Index is ≤3.		
9.		0.0%					
10.		0.0%			gical Adaptation		
	98	= Total Co	ver	Problematic	Hydrophytic V	egetation ¹ (Ex	plain)
_Woody Vine Stratum (Plot size: _30 Foot Radiu				1 Indicators of h	vdric soil and	wetland hydr	ology must
1				be present.	yanc son ana		ology must
2.							
	0	= Total Co	ver	Hydrophytic			
% Bare Ground in Herb Stratum 2		- 10tai C0	vei	Vegetation	Yes O No	•	
				Present?	163 0 110		
Remarks:							
Upland vegetation on slope from road down to	wetland.						

US Army Corps of Engineers

Soil Sampling Point: DP-2U

	-	the depth ne				nfirm the	absence of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Featu _%_	<u>Tvpe ¹</u>	Loc ²	Texture	Remarks
0-20	2.5Y 3/2	100					Clay Loam	
				-			-	
			<u> </u>	-			-	
17		- DM Dadas	- I Malain CC Communication				History DL. David Living M. M.	-1.t.
• • • • • • • • • • • • • • • • • • • •	ncentration. D=Deplet Indicators: (Applica					ins ²Loca	tion: PL=Pore Lining. M=M Indicators for Proble	
Histosol		ible to all LKK	Sandy Gleyed		-			•
	ipedon (A2)		Sandy Redox (1 cm Muck (A9) (L	dox (A16) (LRR F, G, H)
Black His			Stripped Matri	•			Dark Surface (S7)	
Hydroger	n Sulfide (A4)		Loamy Mucky	Mineral (F	1)		High Plains Depre	` '
Stratified	Layers (A5) (LRR F)		Loamy Gleyed	Matrix (F	2)		(LRR H outside	e of MLRA 72 and 73)
	ck (A9) (LRR F,G,H)		Depleted Matr	` '			Reduced Vertic (F:	
= :	Below Dark Surface (A	11)	Redox Dark Su	•	•		Red Parent Materi	al (TF2)
	rk Surface (A12)		Depleted Dark	,	F/)		Very Shallow Dark	. ,
_ `	uck Mineral (S1) lucky Peat or Peat (S2)	(IDD C H)	Redox depress High Plains De	. ,	(E16)		Other (Explain in F	•
	cky Peat or Peat (S3) (L		(MLRA 72	•	• ,			tic vegetation and wetland ent, unless disturbed or problematic.
			(11210172	una /5 c	Licerty		I I I I I I I I I I I I I I I I I I I	chi, unicss disturbed of problematic.
Type:	.ayer (if present):							
	ahaa).						Hydric Soil Present?	Yes O No 💿
Depth (inc								
	il indiantous shoomus							
NO HYUHC SOI	il indicators observed	J.						
Hydrolog	У							
Wetland Hyd	drology Indicators:						Secondary Indica	tors (minimum of two required)
-	icators (minimum of	one required	: check all that apr	olv)			Surface Soil	
	Water (A1)		Salt Crust (B					etated Concave Surface (B8)
	ter Table (A2)		Aquatic Inve	•	(B13)		Drainage Pat	,
Saturation	` ,		Hydrogen Su		. ,		_	zospheres on Living Roots (C3)
_	arks (B1)		Dry Season				(where	
	t Deposits (B2)		Oxidized Rhi		. ,	oots (C3)	Crayfish Burn	-
	oosits (B3)			not tilled	_	. ,	_ ′	sible on Aerial Imagery (C9)
Algal Ma	t or Crust (B4)		Presence of		=			Position (D2)
Iron Dep	oosits (B5)		☐ Thin Muck S		` '		FAC-neutral	• •
Inundati	on Visible on Aerial Ima	agery (B7)	Other (Expla	-	-			Hummocks (D7) (LRR F)
	tained Leaves (B9)	5 , ()			·-··-/			, , ,
Field Observ	vations:							
Surface Water		O No •	Depth (inc	hes):				
Water Table F	Present? Yes	O No •	Donth (inc	haa).		-		
Saturation Pre			Depth (inc	_		Wetla	and Hydrology Present?	Yes O No 💿
(includes capi	YAC	○ No ●	Depth (inc	hes):		-		
Describe Re	corded Data (stream	gauge, moni	tor well, aerial pho	tos, pre	vious inspe	ctions), if	available:	
Remarks:								
No hydrolog	y indicators observe	d.						

US Army Corps of Engineers Great Plains - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - East	c	City/County:	Rosebud	Sampling Date: 11-Jul-19
Applicant/Owner: MDT			State:	:: MT Sampling Point: DP-2W
nvestigator(s): Mark Traxler, Tanner Traxler		Section, To	wnship, Ra	ange: S 34 T 7N R 39E
Landform (hillslope, terrace, etc.): Swale		Local relief	(concave, c	convex, none): concave Slope: 0.0 % / 0.0 c
Subregion (LRR): LRR G	Lat.: 46	.318503		Long.: -106.834643 Datum: WGS84
oil Map Unit Name: Harlem silty clay, 0 to 2 percent slopes				NWI classification: Not Mapped
e climatic/hydrologic conditions on the site typical for this			s • No C	
	significantly			Normal Circumstances" present? Yes No
	naturally pro			eded, explain any answers in Remarks.)
			•	cations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No				, ,
Hydric Soil Present? Yes No			Sampled A	
Wetland Hydrology Present?		within	ո a Wetland	_{d?} Yes No
Remarks:				
Second year at this wetland data point.				
•				
			TIME DO	
VEGETATION - Use scientific names of pl		DominantSpecies?		gion: GP
	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
1	-		, Jialu J	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2.				That are obly there of the second of the sec
3.	0			Total Number of Dominant Species Across All Strata: 1 (B)
4.	0			
	0	= Total Co	ver	Percent of dominant Species That Are OBL FACW or FAC: 100.0% (A/B)
Sapling/Shrub Stratum (Plot size: 15 Foot Radius)		_		That Are OBL, FACW, or FAC: 100.0% (A/B)
1		Ц		Prevalence Index worksheet:
2		<u> </u>		Total % Cover of: Multiply by:
3 4.		<u> </u>		OBL species <u>75</u> x 1 = <u>75</u>
5.		<u> </u>		FACW species $15 \times 2 = 30$
J		= Total Co		FAC species $0 \times 3 = 0$
Herb Stratum (Plot size: 5 Foot Radius)				FACU species $5 \times 4 = 20$
1. Eleocharis palustris	70	✓ 73.7%	OBL	UPL species $0 \times 5 = 0$
2. Hordeum jubatum		15.8%	FACW	Column Totals: <u>95</u> (A) <u>125</u> (B)
3. Elymus trachycaulus		5.3%	FACU	Prevalence Index = B/A = 1.316
4. Schoenoplectus maritimus		5.3%	OBL	Hydrophytic Vegetation Indicators:
5. 6.		0.0%		✓ 1 - Rapid Test for Hydrophytic Vegetation
7		0.0%		✓ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is > 50%
8.	^	0.0%		✓ 2 - Dominance Test is > 50% ✓ 3 - Prevalence Index is ≤ 3.0 ¹
9		0.0%	-	4 - Morphological Adaptations (Provide supporting
10.	0	0.0%		data in Remarks or on a separate sheet)
	95	= Total Co	ver	☐ Problematic Hydrophytic Vegetation¹ (Explain)
				1 Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 Foot Radius)				be present.
<u>Woody Vine Stratum</u> (Plot size: <u>30 Foot Radius</u>) 1.	0			
1		= Total Co		Hydrophytic
1		= Total Co	over	Vegetation
1		= Total Co	over	Vacatation

US Army Corps of Engineers

Soil Sampling Point: DP-2W

Profile Desc		the depth nee				ifirm the	absence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Red Color (moist)	lox Featu <u>%</u>	res Tvpe 1	Loc ²	Texture Remarks
0-20	2.5YR 4/2		10YR 5/8	<u>96</u> 5	D D	<u>LOC-</u>	Clay Loam
	2.511		3,0				
1Type: C=Co	ncentration. D=Depletic	n RM=Reduce	d Matrix CS=Cover	ed or Coate	ed Sand Grai	ns 2loca	ation: PL=Pore Lining. M=Matrix
	Indicators: (Applicat					115 LOCG	Indicators for Problematic Hydric Soils ³ :
Histosol			Sandy Gleyed	-			1 cm Muck (A9) (LRR I, J)
Histic Epi	ipedon (A2)		Sandy Redox ((S5)			Coastal Prairie Redox (A16) (LRR F, G, H)
Black His	tic (A3)		Stripped Matri				Dark Surface (S7) (LRR G)
	n Sulfide (A4)		Loamy Mucky				High Plains Depressions (F16)
	Layers (A5) (LRR F)		Loamy Gleyed	•)		(LRR H outside of MLRA 72 and 73)
	ck (A9) (LRR F,G,H) Below Dark Surface (A1	1)	Depleted Matr Redox Dark Su	. ,			Reduced Vertic (F18)
	rk Surface (A12)	/	✓ Depleted Dark	. ,			Red Parent Material (TF2)
	uck Mineral (S1)		Redox depress		.,		✓ Very Shallow Dark Surface (TF12)✓ Other (Explain in Remarks)
2.5 cm M	lucky Peat or Peat (S2) ((LRR G, H)	High Plains De	pressions	(F16)		³ Indicators of hydrophytic vegetation and wetland
5 cm Muc	cky Peat or Peat (S3) (LF	RR F)	(MLRA 72	and 73 of	FLRR H)		hydrology must be present, unless disturbed or problematic.
Restrictive L	ayer (if present):						
Туре:							
Depth (inc	ches):						Hydric Soil Present? Yes No
Remarks:							
Soil meets cr	iteria for Depleted Ma	atrix.					
Usadaala a							
Hydrolog							
_	drology Indicators:						Secondary Indicators (minimum of two required)
Primary Ind	icators (minimum of	one required;					Surface Soil Cracks (B6)
	Water (A1)		Salt Crust (E	311)			Sparsely Vegetated Concave Surface (B8)
	ter Table (A2)		Aquatic Inve		,		Drainage Patterns (B10)
Saturation			Hydrogen Su				Oxidized Rhizospheres on Living Roots (C3)
Water M	` ,		Dry Season		` ,		(where tilled)
	t Deposits (B2)		Oxidized Rhi	-	_	ots (C3)	Crayfish Burrows (C8)
	osits (B3)		_	not tilled)			Saturation Visible on Aerial Imagery (C9)
	t or Crust (B4)		Presence of		• ,		Geomorphic Position (D2)
	oosits (B5)		Thin Muck S	•	•		FAC-neutral Test (D5)
	on Visible on Aerial Ima	gery (B7)	U Other (Expla	in in Rema	arks)		Frost Heave Hummocks (D7) (LRR F)
Water-St	tained Leaves (B9)					ı	
Field Observ	V	○ No ●	Daniel Co.	l			
Surface Water			Depth (inc	nes):			
Water Table P	Present? Yes	○ No •	Depth (inc	hes):		Watt	and Hydrology Present? Yes No
Saturation Pre (includes capi		○ No ●	Depth (inc	hes):		wetta	and nydrology Present? Tes 🙂 NO 🖰
	corded Data (stream	gauge, monito	or well, aerial pho	tos, prev	ious inspec	tions), if	available:
Remarks:							
Soil moist to	surface due to recen	nt precipitation	n. Water clearly fl	owed thro	ough wetla	nd in spri	ng.
I							

US Army Corps of Engineers Great Plains - Version 2.0

MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	Project Name: Forsyth NW -	East 2. MDT Project #: STPI	P 14-6(9)259 3. Control #: 4	<u>059</u>	
3.	Evaluation Date: <u>7/11/19</u> 4.	Evaluator(s): M. Traxler, T. T	raxler 5. Wetland/Site #(s): F	Forsyth NW - East	
6.	Wetland Location(s): Towns	ship <u>7 N</u> , Range <u>39 E</u> , Section <u>3</u>	34; Township <u>N</u> , Range <u>E</u>	<u></u>	
	Approximate Stationing or I	Roadposts: ~262.3 on US 12			
	Watershed: 14 - Middle Yell	owstone County: _ Rosebud	. <u>-</u>		
7.	Evaluating Agency: RESPECT Purpose of Evaluation: Wetland potentially affect Mitigation wetlands; pro	ected by MDT project	8. Wetland Size (acre)	(visually estimated) 0.56 (measured, e.g. GPS)	
	✓ Mitigation wetlands; po✓ Other	st-construction		AA) Size (acre): (visuall rmining AA) 0.56 (measure	
10		LAND AND AQUATIC HABITA	ATS IN AA (See manual for def	• , `	, a, e.g. e. e,
	HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% OF AA
	Depressional	Emergent Wetland	Excavated	Seasonal / Intermittent	100
L					
F					
ŀ					
Cc	omments:				

11. ESTIMATED RELATIVE ABUNDANCE (of similarly classified sites within the same Major Montana Watershed Basin; see manual.) abundant

12. GENERAL CONDITION OF AA

i. Disturbance: Use matrix below to select the appropriate response; see manual for Montana listed noxious weed and aquatic nuisance vegetation species lists.

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

Comments (types of disturbance, intensity, season, etc.): AA vegetation cover has increased since 2013, following construction of wetland basin, bare ground <5%. Center of basin, area intended to convert to wetland, continues to qualify as upland.

- ii. Prominent noxious, aquatic nuisance, and other exotic vegetation species: Convolvulus arvensis, Tamarix ramosissima (both have decreased since 2016 but still persist)
- iii. Provide brief descriptive summary of AA and surrounding land use/habitat: AA includes a linear, excavated roadside depression parallel to US 12. Surrounding land includes agriculture (grazing) and highway.

13. STRUCTURAL DIVERSITY (Based on number of "Cowardin" vegetated classes present [do not include unvegetated classes]; see #10 above.)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management peristence of additional		Modified Rating
≥3 (or 2 if one is forested) classes		NA	NA	NA
2 (or 1 if forested) classes		NA	NA	NA
1 class, but not a monoculture	mod	←NO	YES→	
1 class, monoculture (1 species comprises ≥90% of total cover)		NA	NA	NA

Comments: Emergent vegetation class present, with several cottonwood maturing saplings though does not qualify as PSS yet.

	Wetland/Site #(s): Forsyth NW - East																				
14	A. HABITAT FOR FEDERA	LLY LI	STED	OR P	ROP	OSED	THRE	ATEN	IED (OR E	NDANG	ERED	PLA	NTS C	OR AN	IMALS	3				
	AA is Documented (D) or S Primary or critical habitat (list Secondary habitat (list speci Incidental habitat (list specie No usable habitat	t speci ies) es)	ies) `			S S S	_														
ii.	Rating: Based on the strong						_													F	
Į	Highest Habitat Level	Doc/F	Primar	y S	us/P	rimary	Do	c/Sec	onda	ary	Sus/Se	conda	ıry	Doc/I	ncider	ntal	Sus	/Incide	ental	Non	е
_ [Functional Point/Rating					-														0L	
	B. HABITAT FOR PLANTS Do not include species lis	OR AN	NIMAL	S RAT										HERIT	AGE I	PROG	RAM				
	AA is Documented (D) or S Primary or critical habitat (list Secondary habitat (list specience) Incidental habitat (list specience) No usable habitat	uspec t speci ies) es)	ted (S) to co		S <u>Sca</u> S <u>Gre</u> S	rlet A	mmanı e Herc	nia - <i>i</i> on (S:	<u>Amm</u> 3)	annia ro	obusta	(S2),				ed Sn	<u>ake</u>			
ii.	Rating: Based on the strong						_										01	1 ! .! .		N	_
ŀ	Highest Habitat Level S1 Species	DOC/I	Primar	yS	us/P	rimary	DC	c/Sec	onaa	ary	Sus/Se	conda	ıry	Doc/I	nciaer	ntai	Sus/	Incide	ntai	None	-
	Functional Point/Rating								-		,										
ĺ	S2 and S3 Species		9H								,										
[Functional Point/Rating																				
i.	AC. GENERAL WILDLIFE HABITAT RATING Evidence of Overall Wildlife Use in the AA: Check substantial, moderate, or low based on supporting evidence. Substantial: Based on any of the following [check]. observations of abundant wildlife #s or high species diversity (during any period) abundant wildlife sign such as scat, tracks, nest structures, game trails, etc. presence of extremely limiting habitat features not available in the surrounding area interview with local biologist with knowledge of the AA Moderate: Based on any of the following [check]. observations of scattered wildlife groups or individuals or relatively few species during peak periods common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc. adequate adjacent upland food sources interview with local biologist with knowledge of the AA Wildlife Habitat Features: Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other in terms of their everent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; by a few or no wildlife observations during peak use periods interview with local biologist with knowledge of AA Wildlife Habitat Features: Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other in terms of their terms of their terms of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; by a few or no wildlife sign interview with local biologist with knowledge of the AA Wildlife Habitat Features: Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structur																				
	Structural Diversity (see #13)					ligh						\triangleright	☑ Mo	derate	•					.ow	
	Class Cover Distribution (all vegetated classes)		□ E\	/en] Un	even			⊠E	ven			□ Un	even			□E	ven	
	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	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
	□ Low Disturbance at AA																				
	(see #12i) ☑ Moderate Disturbance																				
	at AA (see #12i)										Н										
	☐ High Disturbance at AA (see #12i)																				
jii	. Rating: Use the conclusion	ns from	i and	ii abov	e an	d the m	natrix	below	to se	lect t	ne func	tional r	oint :	and rat	ing						
Ī	Evidence of Wildlife Use										es Rati				<u>g.</u>						
	(i)	[<u>Exc</u>	eption	nal			High			<u></u> Me	oderat	<u>e</u>		☐ Lo	w					
	Substantial																1				

Minimal Comments: Very few signs of wildlife observed during field survey. This area is close to the roadway and will likely never achieve a high wildlife habitat rating.

.4M

								W	'etlan	d/Site	#(s): <u>F</u>	orsyth	<u>NW - I</u>	<u>East</u>						
140	 GENERAL FISH HABITA If the AA is not used by fis entrapped in a canal], the 	sh, fish	use is		storab	le due	to ha		onstra	aints, d	or is not	t desire	ed fron	n a ma	anagen	nent pe	erspec	tive [s	uch as	s fish
	Assess this function if the precluded by perched cul-					existin	g situa	ation is	s "cori	ectab	le" sucl	n that t	he AA	could	l be us	ed by f	ish [i.e	e., fish	use is	
	Type of Fishery: Cole	d Wate	r (CW) 🗆 \	Warm	Water	(WW) Use	the (CW or	WW gu	uideline	es in th	ie mai	nual to	comple	ete the	matrix	ζ.	
i. <u>H</u>	abitat Quality and Known	/ Susp	ected	Fish S	pecie	s in A	A: Us	se mat	rix to	select	the fur	nctiona	l point	and r	ating.					-
- 11	Ouration of Surface Water in AA	□ Pe	erman	ent / P	erenn	ial		☐ Seasonal / Intermittent				tent		□ 1	empo	rary / I	Ephen	neral		
	Aquatic Hiding / Resting /	Opti] imal	Adeq	uate	Po	_	Opti] mal	Ade	_ quate	Po		Op	timal	Aded	uate	Po	oor	
ll ll	Thermal Cover: optimal / suboptimal	0	S	0	s	0	S	0	s	0	S	0	S	0	S	0	S	0	S	
1	FWP Tier I fish species																			
(FWP Tier II or Native Game fish species																			
- 11 -	FWP Tier III or Introduced Game fish																ł	1		
ll ll	WP Non-Game Tier IV or No fish species																-	1	-	
Sou	rces used for identifying f	ish sp	p. pot	entially	/ foun	d in A	A:													•
ii. I	Modified Rating: NOTE: Mo	odified	score	cannot	excee	ed 1.0	or be	less th	an 0.	1.										
МD	s fish use of the AA significal EQ list of waterbodies in nee port, or do aquatic nuisance	ed of TI	MDL d	evelopi	ment v	vith lis	ted "P	robabi	le Imp	aired	Uses" i	includir	ng cold	d or w	arm wa	ater fisi	hery o	r aqua	tic life	
	oes the AA contain a docum											tuary p	ool, u	pwelli	ng area	a; spec	cify in o	comm	ents) f	or
iii.	Final Score and Rating: _	Comm	nents:		_															
14E	. FLOOD ATTENUATION Applies only to wetlands t If wetlands in AA are not f	hat are	subje	IA (pro ct to flo in-char	oding	via in	chanı	nel or o	overb eck th	ank flo	ow. box an	d proc	eed to	14F.						
	renchment Ratio (ER) Estir od-prone width = estimated h																		of the	stream.
	/	= _							40.									:		
floo	d prone width / bankfull width	n = ent	renchr	nent ra	tio		2 x F	Bankful	ll Dep	th		CENTER OF THE PERSON OF THE PE	Ydike)	. -	3/4/	(Analy)	9	•	ne Wic	lth
											Bar	ıkfull D	epth	Osoboo	37					
	Slightly Entr ER ≥ 2		d					y Entr		ed					renche : 1.0 –					
	C stream type D stream t		E st	ream ty	/pe			eam ty			A stre	eam typ	oe		ream ty		G st	ream t	уре	

Sli	ightly Entrenche ER ≥ 2.2	ed	Moderately Entrenched ER = 1.41 - 2.2	Entrenched ER = 1.0 − 1.4							
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type					

i. Rating: Working from top to bottom, use the matrix below to select the functional point and rating.

Estimated or Calculated Entrenchment	☐ SI	ightly Entre	nched	☐ Mod	lerately Enti	renched	☐ Entrenched			
(Rosgen 1994, 1996)	C, D	, E stream t	ypes	E	stream typ	e	A, F,	G stream ty	/pes	
Percent of Flooded Wetland Classified as Forested and/or Scrub/Shrub	75%	 25-75%	 <25%	□ 75%	 25-75%	□ <25%	□ 75%	 25-75%	☐ <25%	
AA contains no outlet or restricted outlet										
AA contains unrestricted outlet										

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA?

☐ YES ☐ NO Comments:
AA not subject to flooding from Big Porcupine Creek.

Wetland/Site #(s): Forsyth NW - East

14F.	SH	IOR	ANI) LC)NG	i TEI	RM	SURFAC	CE WATE	R S	TOR	AG	Ε	□ NA	(proceed to 1	14G)			
							••								1 1			••	

Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, then check the NA box and proceed to 14G.

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

Estimated Maximum Acre Feet of Water Contained in Wetlands within the AA that are Subject to Periodic Flooding or Ponding		>5 acre fe	eet	□ 1.1	to 5 ac	re 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								.3L			
Wetlands in AA flood or pond < 5 out of 10 years											

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

14G.	SEDIMENT / NUTRIENT / TOXICANT / RETENTION AND REMOVAL	□ NA (proceed to 14H
------	--	--------	----------------

Applies to wetland with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, check the NA box and proceed to 14H.

i. Rating: Working from top to bottom, use the matrix below to select the functional point and rating.

Sediment, Nutrient, and Toxicant Input Levels within AA	AA receive has potent nutrients, such that substantia sedimenta toxicants, present.	tial to deliv or compou other funct Illy impaire tion, sourc	er sedime inds at levions are r id. Minor es of nutr	ents, rels not rients or	Waterbody is need of TMDI causes" relat toxicants or A has potential nutrients, or of functions are sedimentation or signs of europe of the total control of the total causes of the total	developmer ed to sedime AA receives of to deliver hig compounds s substantially n, sources of	nt for "probal nt, nutrients, or surroundin gh levels of s such that othe y impaired. M nutrients or	ole or g land use ediments, er ajor
% Cover of Wetland Vegetation in AA	⊠≥	⊠ ≥ 70%		70%	□≥7	70%	□ < 70%	
Evidence of Flooding / Ponding in AA		☐ No	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
AA contains no or restricted outlet	1H							
AA contains unrestricted outlet								

Comments: AA achieved greater than 70% vegetation cover, with early succession annuals, native perennial, rhizomotous and bunch grasses, and natural Populus deltoides recruitment.

14H. SEDIMENT / SHORELINE STABILIZATION NA (proceed to 14l)

Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action.

If 14H does not apply, check the NA box and proceed to 14I.

% Cover of Wetland Streambank or Shoreline by Species with Stability	Duration of Surface Water Adjacent to Rooted Vegetation							
Ratings of ≥6 (see Appendix F).	☐ Permanent / Perennial	☐ Seasonal / Intermittent	☐ Temporary / Ephemeral					
□ ≥ 65%								
□ 35-64%								
☐ < 35%								

Comments:

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

i. Level of Biological Activity: Synthesis of wildlife and fish habitat rates (select).

General Fish Habitat Rating	Genera	l Wildlife Habitat Rati	ing (14Ciii)
(14Diii)	☐ E/H	⊠ M	□L
☐ E/H			
■ M			
□ L			
⊠ NA		M	

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

Α	□ Vegetated Component >5 acres						☐ Vegetated Component 1-5 acres						☑ Vegetated Component <1 acre					
В	B ☐ High ☐ Moderate		oderate		Low	☐ High ☐ I		☐ Mc	☐ Moderate ☐ Low		☐ High				☐ Low			
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P																		
S/I																.3L		
T/E/A																		

Wetland/Site #(s): Forsyth NW - East

14I. PRODUCTION EXPORT / FOOD CH	IAIN SUI	PPORT (conti	nued)							
iii. Modified Rating: Note: Modified sco	re cannot	t exceed 1.0 o	r be less than	0.1.						
Vegetated Upland Buffer: Area with mowing or clearing (unless for weed of the state of the stat	control).						-			
iv. Final Score and Rating: <u>.3L</u> Comm	nents:									
14J. GROUNDWATER DISCHARGE / R Check the appropriate indicators in	-	_								
i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known Vegetation growing during AA permanently flooded during Wetland contains an outlet, but Shallow water table and the Other: AA hydrologically con	ormant se a natural dand edge ng drough out no inle site is sat	eason/drought slope. le. ht periods. et. turated to the s	surface.	☐ Perr ☐ Wet ☐ Stre	land contains	s ate present wi inlet but no ou n 'losing' strea	tlet.	, , ,	0 ,	
iii. Rating: Use the information from i ar	d ii abov	e and the table	e below to sele	ct the fur	nctional point a	and rating.				
			Saturation at A							
Criteria			<u>/ATER THAT I</u>			GROUNDWA				
		□ P/P 🖂 S						☐ None		
			71.4							
☑ Groundwater Discharge or Rech	arge		.7M							
		 4, but not obse	1	l.		019.				
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information	te in 2014	atrix below to	erved in 2015,	2016, 20 ⁻ tional poi	 17, 2018, or 20 nt and rating.					
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS	se the ma	atrix below to some some some to some to some the control of the c	select the functions, warm >80 yr-old)	2016, 20 tional poil AA doe cited ra diversi contair	 17, 2018, or 20	n previously O structural Jh OR ciation	previou associa	es not containusly cited rarations AND sty (#13) is lov	e types OR tructural	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11)	se the ma AA cor spring foreste associ the MT	atrix below to some some some to some to some the control of the c	select the functions, warm >80 yr-old) R plant s "S1" by	2016, 20 tional poir AA doe cited ra diversi contair listed a	nt and rating. es not containare types ANI ty (#13) is highs	n previously O structural In OR Ciation MTNHP	previou associa diversi	usly cited rare ations AND s	e types OR tructural	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i)	se the ma AA cor springs foreste associ the MT	atrix below to sometime for mature (seed wetland Oliation listed a TNHP	select the function of the select the selec	2016, 20 tional poir AA doe cited ra diversi contair listed a	nt and rating. es not containare types ANI ty (#13) is higher as plant asso as "S2" by the	n previously O structural In OR Ciation MTNHP	previou associa diversi	usly cited ran ations AND s ty (#13) is lov Common	e types OR tructural w-moderate Abundant	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i)	se the ma AA cor springs foreste associ the MT Rare	atrix below to sometime for mature (seed wetland Oliation listed a NHP	select the function of the select the selec	zo16, 20 tional poin AA doe cited ra diversi contain listed a	nt and rating. es not containare types ANI ty (#13) is higher as plant asso as "S2" by the	n previously D structural In OR Ciation MTNHP D Abundant	previou associa diversi	usly cited rar ations AND s ty (#13) is lov Common	e types OR tructural w-moderate Abundant .2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i)	se the ma AA cor springs foreste associ the MT Rare	atrix below to sometime for mature (seed wetland Oliation listed a TNHP	select the function of the select the selec	tional point AA doe cited radiversi containt listed a	nt and rating. es not containare types ANI ty (#13) is higher as plant asso as "S2" by the	n previously D structural In OR Ciation MTNHP Abundant	previou associa diversi	usly cited ran ations AND s ty (#13) is lov Common	e types OR tructural w-moderate Abundant	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides	se the ma AA cor springs foreste associ the MT Rare ch. ENTIAL	atrix below to somatine (see the second of t	select the function of the select the sele	zo16, 20: AA doe cited ra diversi contair listed a liste	nt and rating. es not containare types ANI ty (#13) is higher assons "S2" by the Common Summary and	n previously D structural gh OR ciation MTNHP D Abundant Rating page)	previou associa diversi	usly cited rar ations AND s ty (#13) is lov Common	e types OR tructural w-moderate Abundant .2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides i. Is the AA a known or potential recreation.	se the ma AA cor springs foreste associ the MT Rare ch. ENTIAL a recrea	atrix below to some sor mature (see the wetland of listed a section listed lis	select the function select	zo16, 20: AA doe cited radiversi contain listed a listed	nt and rating. es not containare types ANI ty (#13) is higher asso as "S2" by the Common Summary and	n previously D structural In OR Ciation MTNHP D Abundant Rating page)	previou associa diversi	usly cited ranations AND sty (#13) is low	e types OR tructural w-moderate Abundant2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides i. Is the AA a known or potential recreatii. Check categories that apply to the A	se the ma AA cor springs foreste associ the MT Rare ch. ENTIAL a recrea	atrix below to somatine fen, both sor mature (sed wetland Oliation listed a NHP	select the function of the select the function of the select the sele	zo16, 20: AA doe cited radiversi contain listed a listed	nt and rating. es not containare types ANI ty (#13) is higher asso as "S2" by the Common Summary and	n previously D structural In OR Ciation MTNHP D Abundant Rating page)	previou associa diversi	usly cited ranations AND sty (#13) is low	e types OR tructural w-moderate Abundant2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides i. Is the AA a known or potential recreatii. Check categories that apply to the Aiii. Rating: Use the matrix below to select	se the ma AA cor springs foreste associ the MT Rare ch. ENTIAL a recrea ational of AA: COLUMN COLUM	atrix below to somatins fen, both sor mature (sed wetland Oliation listed a rNHP	select the function of the select the select the select the select the select the select the function of the select the sele	tional point AA doe cited radiversi contain listed a Rare	nt and rating. es not containare types ANI ty (#13) is higher asso as "S2" by the Common Summary and	n previously D structural In OR Ciation MTNHP D Abundant Rating page)	previou associa diversit	usly cited ranations AND sty (#13) is low	e types OR tructural w-moderate Abundan2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides i. Is the AA a known or potential recreation. Check categories that apply to the Action iii. Rating: Use the matrix below to select Known or I	se the ma AA cor spring foreste associ the MT Rare ch. ENTIAL a recrea ational or AA: O ott the func	atrix below to somatine fen, both sor mature (sed wetland Oliation listed a NHP	select the functions, select the functions, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportuins site? YES ientific Study	tional point AA doe cited radiversi contair listed a Rare	nt and rating. es not contain are types ANI ty (#13) is high as plant asso as "S2" by the Common Summary and NO, che umptive Recre	n previously D structural In OR Ciation MTNHP D Abundant Rating page)	previou associa diversi	usly cited ranations AND sty (#13) is low	e types OR tructural w-moderate Abundan2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides i. Is the AA a known or potential recreatii. Check categories that apply to the Aiii. Rating: Use the matrix below to select Known or Public ownership or public easements.	se the ma AA cor springs foreste associ the MT Rare ch. ENTIAL a recrea ational or AA: O o t the func	atrix below to somatine fen, both sor mature (seed wetland of lation listed a rNHP	select the function of the select the sele	ional point AA doe cited radiversi contair listed a Rare O Overall unity. G, go to ii. Conserval Area ermissio	nt and rating. es not contain are types ANI ty (#13) is high as plant asso as "S2" by the Common Summary and NO, che umptive Recre	n previously D structural In OR Ciation MTNHP D Abundant Rating page)	previou associa diversit	usly cited ranations AND sty (#13) is low	e types OR tructural w-moderate Abundan2L	
☐ Groundwater Discharge or Rech☐ Insufficient Data/Information Comments: Ponding was observed on si 14K. UNIQUENESS i. Rating: Working from top to bottom, u Replacement Potential Estimated Relative Abundance (#11) ☐ Low Disturbance at AA (#12i) ☐ Moderate Disturbance at AA (#12i) ☐ High Disturbance at AA (#12i) Comments: AA resembles a roadside dit 14L. RECREATION / EDUCATION POT Affords 'bonus' points if AA provides i. Is the AA a known or potential recreation. Check categories that apply to the Action iii. Rating: Use the matrix below to select Known or I	se the ma AA cor springs foreste associ the MT Rare ch. ENTIAL a recrea ational or AA: Otential of the function with go	atrix below to sontains fen, both sor mature (sed wetland Oliation listed and Interest of the sed wetland of	select the function of the select	ional point AA doe cited radiversi contair listed a Rare O Overall unity. io Overall unity. io Consider AA doe cited radiversi contair listed a Rare O Overall unity. io AB Area ermissio	nt and rating. es not containare types ANI ty (#13) is higher splant asso s "S2" by the Common Summary and NO, che	n previously D structural In OR ciation MTNHP D Abundant I Rating page) Inck the NA box eational	previou associa diversit	usly cited rareations AND sty (#13) is low	e types OR tructural w-moderate Abundan2L	

15. GENERAL SITE NOTES: _____

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	low 0.00	1.00	0	
B. MT Natural Heritage Program Species Habitat	high 0.90	1.00	0.50	*
C. General Wildlife Habitat	mod 0.40	1.00	0.22	*
D. General Fish Habitat	NA	NA	0	
E. Flood Attenuation	NA	NA	0	
F. Short and Long Term Surface Water Storage	low 0.30	1.00	0.17	
G. Sediment / Nutrient / Toxicant Removal	high 1.00	1.00	0.56	*
H. Sediment / Shoreline Stabilization	NA	NA		
I. Production Export / Food Chain Support	low 0.30	1.00	0.17	
J. Groundwater Discharge / Recharge	mod 0.70	1.00	0.39	*
K. Uniqueness	low 0.20	1.00	0.11	
L. Recreation / Education Potential (bonus point)	NA		0	
Total Points	3.8	8	2.12 Total	Functional Units
Percent of Possibl	e Score 48% (round	I to nearest whol	e number)	

	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; if not 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 #).
C	OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.

APPENDIX C PROJECT AREA PHOTOGRAPHS

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

C-1 RSI-2978

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 2019



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 2019

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 2019



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 2019

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 2019



Photo Point 6 Bearing: 300 degrees

Location: Center of new dike Year: 2017



Bearing: 300 degrees

Location: Center of new dike Year: 2019



Bearing: 120 degrees

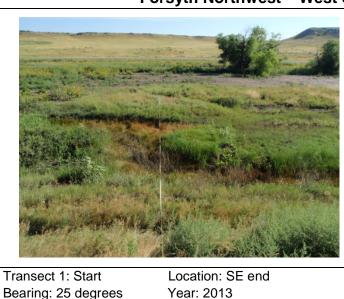
Location: Center of new dike Year: 2017



Photo Point 6 Bearing: 120 degrees

Location: Center of new dike Year: 2019

Forsyth Northwest - West Site: Transect Photographs



Bearing: 25 degrees



Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2019



Transect 1: End Bearing: 205 degrees

Location: SE end Year: 2013



Transect 1: End Bearing: 205 degrees

Location: SE end Year: 2019



Transect 2: Start Bearing: 25 degrees

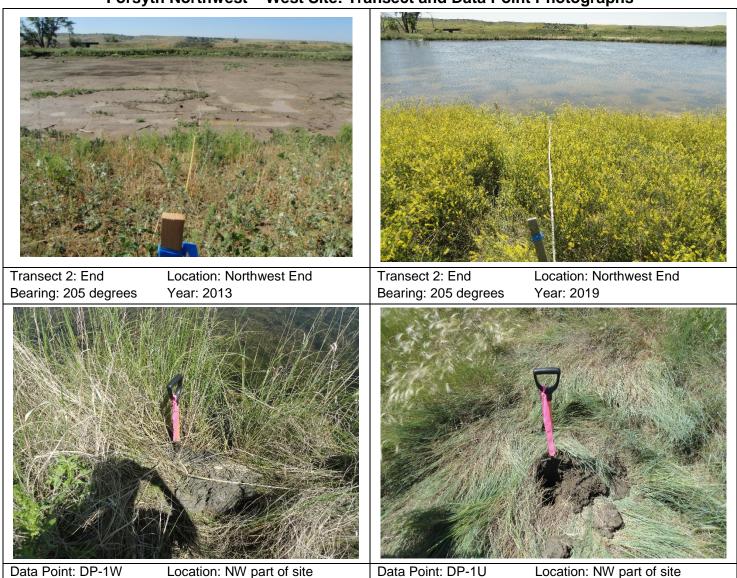
Location: NW End Year: 2013



Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2019

Forsyth Northwest – West Site: Transect and Data Point Photographs



Year: 2019

Year: 2019

Location: NW part of site

Forsyth Northwest – Middle: Photo Point and Transect Photographs



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2013



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2019



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end Year: 2013



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end Year: 2019



Transect 1: Start Bearing: 205 degrees

Location: Middle of Site Year: 2013

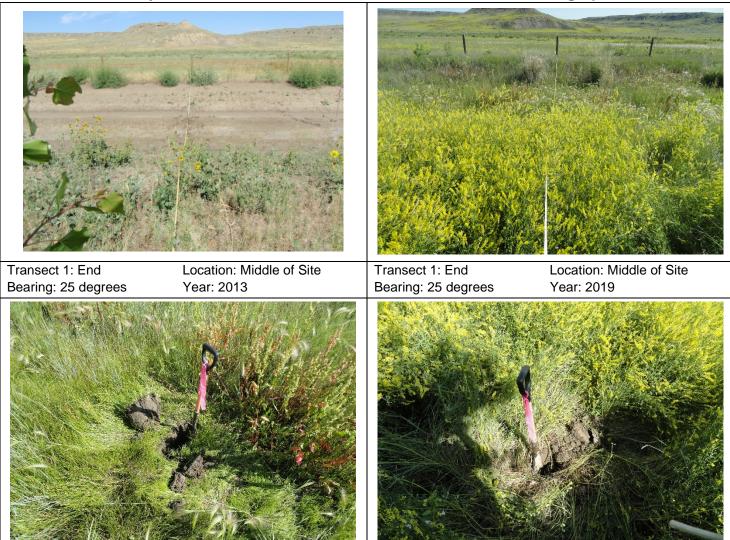


Transect 1: Start Bearing: 205 degrees

Location: Middle of Site

Year: 2019

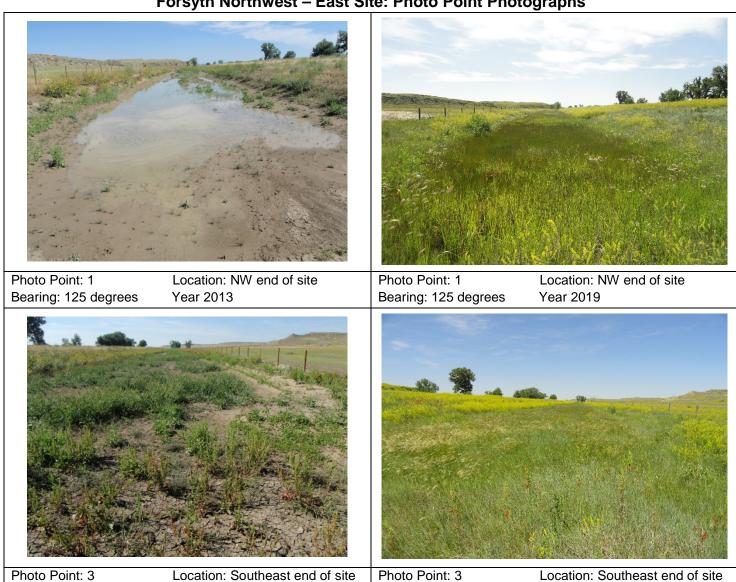
Forsyth Northwest - Middle: Transect and Data Point Photographs



Data Point: DP-1W Year: 2019 Location: Middle of site

Data Point: DP-1U Year: 2019 Location: Middle of site

Forsyth Northwest – East Site: Photo Point Photographs



Bearing: 305 degrees

Year 2019

Bearing: 305 degrees

Year 2013

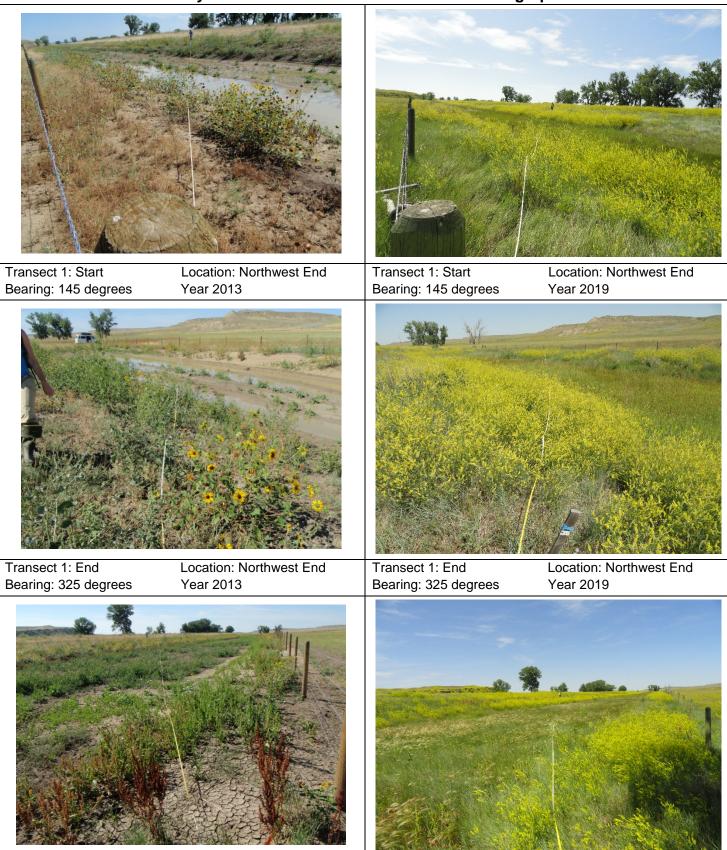
Forsyth Northwest – East Site: Photo Point Photographs



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 2019

Forsyth Northwest – East Site: Transect Photographs



Transect 2: Start

Bearing: 280 degrees

Location: Southeast End

Year 2019

Location: Southeast End

Year 2013

Transect 2: Start

Bearing: 280 degrees

Forsyth Northwest – East Site: Transect and Data Point Photographs

