MONTANA DEPARTMENT OF TRANSPORTATION WETLAND MITIGATION MONITORING REPORT

FORSYTH – NORTHWEST: WEST SITE (SITE 1); MIDDLE SITE (SITE 2); EAST SITE (SITE 3)

ROSEBUD COUNTY, MONTANA

PROJECT COMPLETED: 2012 (EAST, WEST, AND MIDDLE)

MONITORING REPORT #6: DECEMBER 2018



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Montana Department of Transportation Wetland Mitigation Monitoring Report: Year 2018

FORSYTH – NORTHWEST MITIGATION SITE WEST SITE (SITE 1); MIDDLE SITE (SITE 2); EAST SITE (SITE 3) ROSEBUD COUNTY, MONTANA

Forsyth East, Middle, and West Constructed: 2012 MDT Project Number STPP 14-6 (9) 259 CN 4059 (Forsyth – Northwest) Control Number 1396

USACE Number: NOW-2002-90-599 Control Number 1514 (Forsyth – Northwest) NOW-2006-906-76 MTB (Forsyth – Northwest)

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December 2018

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1.0 INTRODUCTION

The 2018 Forsyth – Northwest (FNW) wetland monitoring report documents the sixth year of monitoring at three of the four FNW sites: (1) West, (2) Middle, and (3) East. Monitoring at the Treasure County Line site (4) was ended following the 2017 monitoring event because the site had reached its maximum wetland development potential and monitoring was no longer warranted. The 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 in 2012. This report includes monitoring results for each of the three sites and a discussion of the mitigation credits developed for the FNW project. To simplify the wetland crediting documented in this report, the final wetland acreages from the 2017 Treasure County Line monitoring report are provided in this report.

The three wetland mitigation sites are located in Rosebud County in the Sagebrush Steppe ecoregion of the Northwest Great Plains. The sites are within Watershed #14 – Middle Yellowstone. All three sites are located northwest of Forsyth along Montana Highway 12 at mile markers 262.3 (Site 3: East), 261.9 (Site 2: Middle), and 260 (Site 1: West) within the Big Porcupine Creek subbasin, as shown in Figure 1-1. Figures A-2, A-5, and A-8 (Appendix A) show the monitoring activity locations, while Figures A-3, A-6, and A-9 show mapped site features for each site, respectively. Figures A-4, A-7, and A-10 (Appendix A) show the 2018 wetland delineation boundaries compared to the pre-project wetland boundaries at each site. Appendix B contains the MDT Wetland Mitigation Site Monitoring forms, the US Army Corps of Engineers (USACE) Great Plains (GP) Regional Supplement Wetland Determination Data forms [USACE, 2010], and the 2008 MDT Montana Wetland Assessment Method (MWAM) forms [Berglund and McEldowney, 2008] for each site. Appendix C contains photographs of the project areas, and Appendix D includes the project plan sheets.

1.1 IMPACTS AND MITIGATION

Wetland impacts for the FNW project were identified in USACE permit #NWO-2006-90676-MTB and a wetland mitigation monitoring plan prepared by MDT and dated February 15, 2012. The wetland mitigation sites are intended to provide credits for impacts caused by the Volborg – North and South project (constructed in 2004) and the FNW project (completed in 2012). The Treasure County Line site was constructed in 1999 before the 2.18 acres of impact that resulted from the FNW project. The 2012 mitigation plan outlined that this site had produced 1.78 acres of wetland credit, which was awarded at a 1:1 credit ratio. Applying standard wetland compensatory mitigation ratios [USACE, 2005], 11 acres was the total area of required mitigation presented in the approved wetland mitigation plan. Table 1-1 provides a summary of the impacts, appropriate ratios, and anticipated mitigation requirements. The anticipated wetland mitigation acreages produced by the FNW project are listed by site and mitigation type in Table 1-2. Mitigation requirements and estimated credit development are discussed in more detail in Section 3.5 of this report.

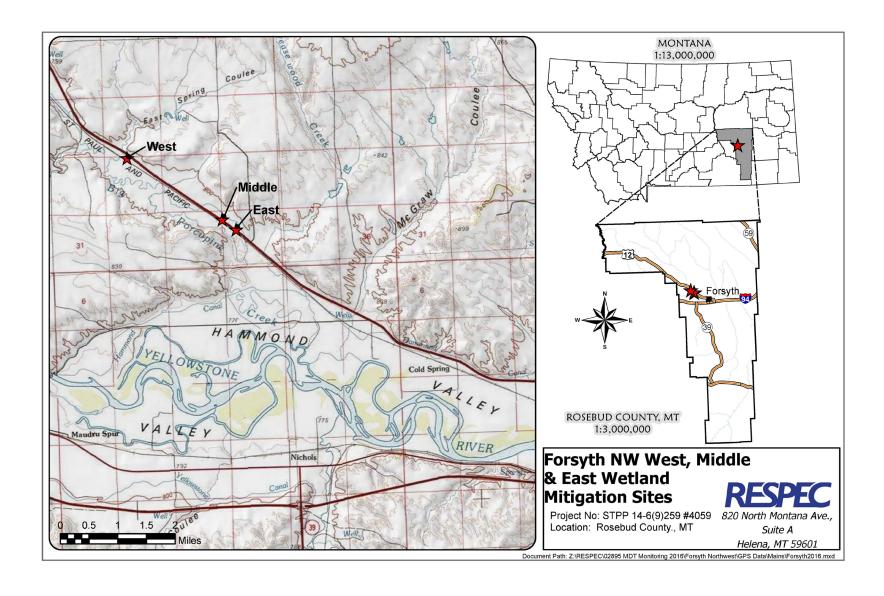


Figure 1-1. Locations of the Forsyth – Northwest Mitigation Sites: West (Site 1), Middle (Site 2), and East (Site 3).

Table 1-1. Wetland Impacts to be Mitigated at the Forsyth - Northwest Sites

MDT Project	Impacts (acres)	Credits (acres)	Balance Remaining (acres)	Ratio	Mitigation (acres)
Volborg – North and South	6.80	0.00	6.80	1.5:1	10.20
Forsyth – Northwest	2.18	1.78	0.40	2:1	0.80
Total	8.98	1.78	-	_	11.00

Table 1-2. Anticipated Wetland Mitigation Acreages for the Forsyth – Northwest Sites

Wetland	Expected Credits			
Mitigation Site	Mitigation Type	Acre		
	Creation	9.09		
Site 1: West	Preservation	1.29		
	Total for Site 1	10.38		
Site 2: Middle	Creation	0.34		
Site 3: East	Creation	1.07		
Total for Sites 1	11.79			
Site 4: Treasure County Line	Previous Creation (Credit)	1.78		
Total for All FNV	13.57			

1.2 GENERAL MITIGATION OBJECTIVES

The MDT-developed performance standards and monitoring requirements (as presented in the approved mitigation plan) for the FNW sites are listed below. Aside from monitoring requirements, no quantitative metrics or criteria are associated with the success of these mitigation sites.

1. Vegetation Community:

- a. Establish permanent photo points
- b. Establish vegetation transects to monitor the development of each vegetative community and its diversity
- c. Develop a plant species list during each monitoring visit
- d. Plot vegetative communities on as-built plants
- e. Determine areal coverage of vegetative community from as-built plans, aerial photographs, or by conventional or global positioning system (GPS) survey every other year, starting in 2013
- f. Monitor for and control invasive weed species.

2. Soils:

- a. Establish monitoring points for hydric soil development
- b. Monitor and document the development of hydric soils by using a Munsell Soil Chart
- c. Document the progression of reducing soil conditions as the soil transitions from an aerobic state to an anaerobic (hydric) state.

3. Hydrology:

- a. Delineate inundated areas no earlier than the second weekend of June every other year, starting in 2013
- b. Survey and document the hydrology within the new wetland area no earlier than the second weekend of June every other year, starting in 2013
- c. Measure the horizontal and vertical extent of the soil saturation zone at the margins of the wetlands.

4. Wildlife Community:

- a. Birds: Create and maintain a cumulative list of bird species observed
- b. **Mammals:** Create and maintain a list of mammalian species observed either directly or indirectly (e.g., tracks and scat) during the biennial monitoring visits
- c. **Herptiles:** Create and maintain a list of the amphibian and reptile species observed either directly or indirectly (e.g., tracks and nests) during the biennial monitoring visits.

5. MDT Functional Assessment:

A formal MDT Functional Assessment will be completed during each monitoring period.

6. Routine Wetland Determination:

a. A Routine Wetland Determination form will be completed during each monitoring period according to the 1987 Corps of Engineers Wetland Delineation Manual (1987 Wetland Manual) [Environmental Laboratory, 1987] and to the terms in the most applicable USACE 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (2010 GP Regional Supplement) [USACE, 2010].

1.3 MITIGATION SITES

The following sections provide a general discussion of the three wetland mitigation sites monitored in 2018. For details related to the Treasure County Line site, please see the 2017 Forsyth Northwest monitoring report [RESPEC 2017]. The discussion includes location, site topography, mitigation objectives, and targeted wetland community goals.

1.3.1 West Site - Site 1

The West site is a 13.71-acre site owned by MDT and located at the mouth of East Spring Coulee in the floodplain of Big Porcupine Creek. The site is intended to provide 10.38 acres of compensatory wetland mitigation. Approximately 1.29 acres of preexisting wetlands will be preserved at this site. The monitoring area boundary is shown on Figures A-3 and A-4 (Appendix A). Mitigation plan sheets are presented in Appendix D. Proposed mitigation actions included the following:

- Excavating new wetland areas with undulating bottoms
- Creating emergent wetlands by placing salvaged wetland sod and hydrophytic vegetation within the excavated wetlands and seeding with wetland grass mix
- Constructing a water retention dike on the eastern end of the project site.

The targeted wetland community types included emergent, scrub/shrub, and forested classes dominated by herbaceous hydrophytes, willows, and cottonwoods. Site construction was completed in summer 2012, and the revegetation was completed from August through October 2012.

1.3.2 Middle Site – Site 2

The Middle site is a 1.80-acre site owned by MDT. The site is adjacent to US Highway 12 and situated among old meander scars across the Big Porcupine Creek floodplain. This area is intended to provide 0.34 acre of compensatory wetland mitigation. The monitoring area boundary is shown on Figures A-5 and A-6 (Appendix A). Mitigation plan sheets are presented in Appendix D. Proposed mitigation actions included the following:

- Excavating new wetland areas with undulating bottoms
- Creating emergent wetlands by placing salvaged wetland sod and hydrophytic vegetation within the excavated wetlands and seeding with wetland grass mix.

The proposed wetland community for this site is a palustrine emergent system dominated by herbaceous hydrophytes. Site construction was completed in the summer of 2012, and the revegetation was completed from August through October in 2012.

1.3.3 East Site – Site 3

The East site is a 2.74-acre site owned by MDT. The site is located approximately 1,000 feet from the Middle site and is directly adjacent to US Highway 12. The East site is intended to provide 1.07 acres of compensatory wetland mitigation. The monitoring area boundary is shown on Figures A-7 and A-8 (Appendix A). Mitigation plan sheets are presented in Appendix D. Proposed mitigation actions included the following:

- Excavating new wetland areas with undulating bottoms
- Creating emergent wetlands by placing salvaged wetland sod and hydrophytic vegetation within the excavated wetlands and seeding with wetland grass mix.

The proposed wetland community for this site is a palustrine emergent system dominated by herbaceous hydrophytes. Site construction was completed in the summer of 2012, and the revegetation was completed from August through October in 2012.

2.0 METHODS

All three sites were monitored on July 11, 2018. Information contained in the Wetland Mitigation Site Monitoring forms and Wetland Determination Data forms was recorded in the field during the site investigation (Appendix B). Monitoring activity locations for the West, Middle, and East, sites were mapped with a GPS as illustrated on Figures A-2, A-5, and A-8, respectively (Appendix A). The collected information included wetland delineation, vegetation community mapping, vegetation transect monitoring, soil and hydrology data, bird- and wildlife-use documentation, photographic documentation, functional assessments, and a nonengineering examination of the infrastructure established within the mitigation project area. Monitoring methods have remained relatively

consistent at this site since the onset of monitoring. The 2013 Forsyth Northwest monitoring report [Confluence Consulting, Inc., 2013] provides a more detailed description of monitoring methods at this site. The 2013 monitoring report can be found online (https://www.mdt.mt.gov/other/webdata/external/planning/wetlands/2013_REPORTS/FORSYTH_NORTHWEST_2013_FINAL.PDF).

3.0 RESULTS

3.1 WEST SITE - SITE 1

3.1.1 Hydrology

The average total annual precipitation recorded at the Forsyth, Montana, weather station (243098) from 1975 through 2017 was 14.5 inches [Western Regional Climate Center, 2018]. Annual precipitation in recent years was 19.5 inches (2013), 18.3 inches (2014),10.0 inches (2015), 19.8 inches (2016), and 12.2 inches in 2017. These data indicate that above-average precipitation was recorded at the site in 2013, 2014, and 2016, while below-average precipitation was recorded in 2015 and 2017. In June 2017, the governor of Montana issued Executive Order 5-2017 that declared a drought emergency to exist in eastern Montana. Later, under Executive Order No. 6-2017, the governor declared a drought disaster in Rosebud County and 13 other counties in eastern Montana [DNRC, 2017]. The precipitation in 2018 from January through August totaled 19.5 inches at the Forsyth (243098) meteorological station. This 8-month total is approximately 8.6 inches above the long-term average (10.8 inches).

The main source of hydrology at the 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. With precipitation levels that are significantly above average between January and August in 2018, the mitigation site received heavy runoff from the East Spring Coulee and filled the mitigation site with water to full capacity. 2018 is the first year since 2013 when monitoring began that this site has been completely flooded during the monitoring event (Appendix C).

Mitigation activities included excavating to lower the ground surface of uplands to match adjacent existing wetlands and the construction of a dike across two wetland/ephemeral swales along the lower end of the site (east side) to impound periodic surface water. In 2013, high surface water flows within the site breached the western portion of the dike structure and required the MDT maintenance forces to make repairs in the fall of 2013. This same dike structure failed again at the same location in 2014 and required additional repairs by MDT maintenance forces. The dike failed again in 2015 and required the MDT Aquatic Resource Section to reevaluate the original design of the dike structure and develop a new dike structure to accommodate high flow events that pass over the structure. A new design was approved by the USACE in 2016, and construction was undertaken in the spring of 2017 to rebuild the dike and harden the outlet structure with rip-rap to prevent future failures. In the spring of 2018, the dike structure was subject to high flow events, and water was impounded behind the dike for the first time since 2013.

Two data points (DP-1W and DP-1U) were assessed to determine the upland and wetland boundaries (Wetland Determination Data forms, Appendix B). DP-1W is located west of Transect 2 (T-2) start. The soil at DP-1W was saturated to the surface and standing water in the pit occurred at 14 inches. No primary or secondary indicators of wetland hydrology were observed at DP-1U, which is located in upland community Type 5 – *Symphoricarpos albus/Pascopyron smithii*. These matched data points were moved in 2018 because the previous location of DP-1W was under significant water in 2018 with no vegetation visible.

3.1.2 Vegetation

A total of 79 plant species were identified during the 2013 through 2018 field surveys, as listed in Table 3-1. One new species—small soapweed yucca (*Yucca glauca*), which is an upland cactus species—was identified for the first time along the south site fence. The indicator status for all of the plants was derived from the 2016 NWPL [Lichvar et al., 2016]. The mitigation area contains several mature eastern cottonwoods (*Populus deltoides*) near the center of the site and a few large fragile willows (*Salix fragilis*) along the undisturbed existing wetland swales. Seventeen vegetation communities have been mapped across the site from 2013 through 2018 with only seven of those communities persisting in 2018. The high-water levels across the site in 2018 essentially flooded out several community types that were present in 2017. The seven community types on this site in 2018 include the following:

- 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.

The species composition for each community is included on the West site's Wetland Mitigation Site Monitoring form (Appendix B) and discussed below. Vegetation community boundaries are shown in Figure A-3 (Appendix A).

Upland Community Type 1 – *Bromus tectorum/Sarcobatus vermiculatus* was identified on 1.2 acres along the side slope of the railroad grade along the southwestern boundary. Dominant species included cheatgrass (*Bromus tectorum*), greasewood (*Sarcobatus vermiculatus*), western wheatgrass (*Pascopyrum smithii*), and false meadow rye grass (*Schedonorus pratensis*).

Upland Community Type 5 – *Symphoricarpos albus/Pascopyrum smithii* was identified on 1.1 acres located in undisturbed upland along the southern boundary of the project area. Dominant species included common snowberry (*Symphoricarpos albus*), western wheatgrass, greasewood, and Japanese brome (*Bromus arvensis*).

Table 3-1. Vegetation Species Observed at the West Site From 2013 Through 2018 (Page 1 of 2)

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

Table 3-1. Vegetation Species Observed at the West Site From 2013 Through 2018 (Page 2 of 2)

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

⁽a) 2016 NWPL [Lichvar et al., 2016]. New species that were identified in 2018 are in bold.

Upland Community Type 6 – *Pascopyrum smithii/Bromus tectorum* was identified on 0.9 acre in undisturbed upland adjacent to Montana Highway 12 along the northeastern boundary. This community replaced a portion of upland community Type 1 because of changes in species composition and their associated cover classes. The community was dominated by cheatgrass, yellow sweet clover (*Melilotus officinalis*), and western wheatgrass.

Wetland Community Type 8 – *Typha latifolia/Eleocharis palustris* was identified on 0.6 acre across the site in 2018. This community type was 100 percent inundated during the site visit and is expected to expand should similar hydrological conditions persist in future years. The community was dominated by common spike-rush (*Eleocharis palustris*) and broad-leaf cattail (*Typha latifolia*).

Wetland Community Type 9 – *Eleocharis palustris*/Open Water was identified on 3.2 acres on the western half of the flooded mitigation site. The most abundant species in the community were common spike-rush, aquatic macrophytes, and saltmarsh club-rush (*Schoenoplectus maritimus*). Open water likely persisted in this community type throughout the 2018 growing season.

Wetland Community Type 16 – *Alopecurus arundinaceus/Hordeum jubatum* was identified in a new 0.10-acre wetland area along the projects southwest border (Figure A-3, Appendix A). This community type was dominated by creeping meadow-foxtail (*Alopecurus arundinaceus*), foxtail barley (*Hordeum jubatum*), and arum-leaf arrowhead (Sagittaria cuneate).

Wetland Community Type 17 – Open Water was identified on 6.7 acres of the mitigation site in 2018. Significantly above-average precipitation between January and July resulted in the entire excavation/diked area to be inundated with standing water. This community type replaced several types previously identified in the eastern half of the site. Flooded dead and dying vegetation was noted across this community type and individual wetland plants were beginning to emerge including cattail and creeping spike-rush.

Vegetation cover was measured along two transects at the West site in 2018 (Figure A-3, Appendix A). Data recorded on T-1 are summarized in Table 3-2 and Charts 3-1 and 3-2. Photographs of the West transect start and end points are provided in Appendix C. T-1 is located in the eastern half of the site and extends 282 feet from southwest to northeast. In 2017, this transect crossed upland community Type 5 – Symphoricarpos albus/Pascopyrum smithii, Type 6 – Pascopyrum smithii/Bromus tectorum, and Type 11 – Pascopyrum smithii/Elymus repens; and wetland community Type 8 – Typha latifolia/Eleocharis palustris and Type 12 – Hordeum jubatum/Elymus trachycaulus. In 2018, this transect started in Type 5 and the remaining transect crossed Type 17 – open water. All other community types from 2017 were flooded under 2–3 feet of standing water. This transect spans the 2017 construction zone created as part of the dike repair on this end of the site. Wetland habitat is expected to evolve along this transect in the future following the 2017 dike repair, and exceptional inundation in 2018.

Table 3-2. T-1 Data Summary for the West Site From 2013 Through 2018

Monitoring Year		2014	2015	2016	2017	2018
Transect Length (feet)	282	282	282	282	282	282
Vegetation Community Transitions Along Transect	6	6	7	7	5	1
Vegetation Communities Along Transect	3	3	5	5	5	1
Hydrophytic Vegetation Communities Along Transect	1	1	2	4	2	0
Total Vegetative Species	27	35	37	26	18	5
Total Hydrophytic Species	10	10	10	5	4	0
Total Upland Species	17	25	27	21	14	5
Estimated % Total Vegetative Cover	75	80	80	90	46	5
Estimated % Unvegetated	25	20	20	10	54	95
% Transect Length Comprising Hydrophytic Vegetation Communities	15.6	18.8	37	37	34	0
% Transect Length Comprising Upland Vegetation Communities	84.4	81.2	63	63	66	5
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	95
% Transect Length Comprising Mudflat	0	0	0	0	0	0

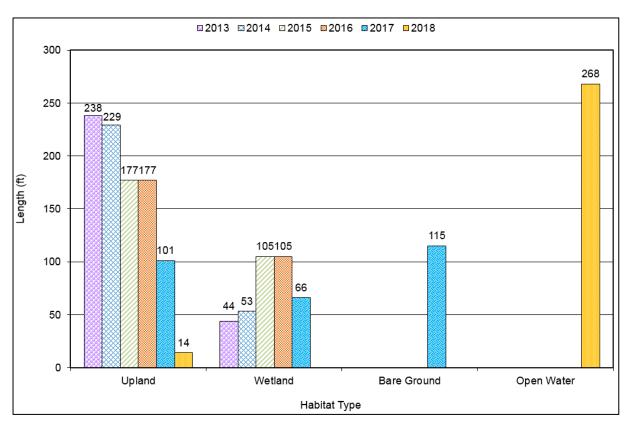


Chart 3-1. T-1 Map for the West Site Showing Vegetation Types From Transect Start (0 Foot) to End (282 Feet) From 2013 Through 2018.

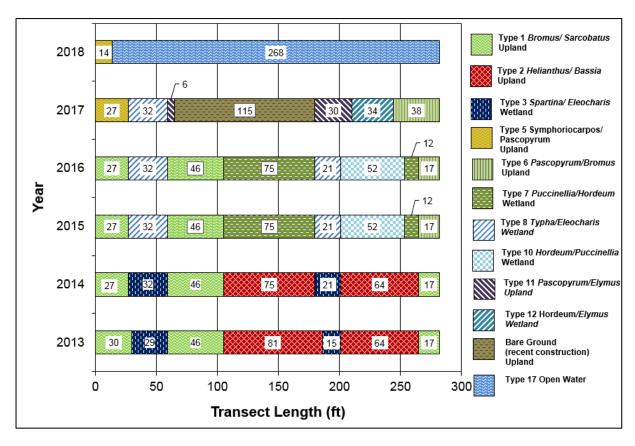


Chart 3-2. Length of Vegetation Communities Within T-1 at the West Site From 2013 Through 2018.

Transect 2 (T-2) data are summarized in Table 3-3 and Charts 3-3 and 3-4. T-2 is located in the western half of the site and extends 261 feet from southwest to northeast, with intervals that alternate between upland community Types 5 and 6 and wetland community Type 9 – *Eleocharis plaustris*/Open Water. Hydrophytic vegetation communities composed 90 percent of T-2 in 2018. A transition from pioneer to climax wetland community is also occurring along T-2, where weedy species and excavated bare soils in 2014 have been replaced by over 80 percent cover of an obligate wetland species (*Eleocharis*).

Infestations of two Priority 2B noxious weeds (Canada thistle [Cirsium arvense] and leafy spurge [Euphorbia esula]) were mapped within the project site (Figure A-3, Appendix A). Overall, the weed infestations are low (< 1 percent cover) across the site because several were flooded by 2018 water levels across the site.

No containerized shrubs or trees were installed at this site. Revegetation efforts included a combination of salvaged wetland materials from impacted wetlands along the road re-construction project and seeding after construction. The seeding mixture included wand panic grass (*Panicum virgatum*), American mannagrass (*Glyceria grandis*), Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), and Nuttall's alkaligrass (*Puccinellia nuttalliana*). Woody species are regenerating naturally within the site, including eastern cottonwood and fragile willow. The areas that were recently disturbed by dike repair in 2017 were re-seeded with an upland seed mix.

Table 3-3. T-2 Data Summary for the West Site From 2013 Through 2018

Monitoring Year	2013	2014	2015	2016	2017	2018
Transect Length (feet)	261	261	261	261	261	261
Vegetation Community Transitions Along Transect	2	2	2	2	3	2
Vegetation Communities Along Transect	2	2	3	3	4	3
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	2	1
Total Vegetative Species	21	26	29	28	19	13
Total Hydrophytic Species	8	11	9	8	9	4
Total Upland Species	13	15	20	20	10	9
Estimated % Total Vegetative Cover	10	20	20	82	92	20
Estimated % Unvegetated	90	80	80	13	8	80
% Transect Length Comprising Hydrophytic Vegetation Communities	87	87	87	87	87	90
% Transect Length Comprising Upland Vegetation Communities	13	13	13	13	13	10
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

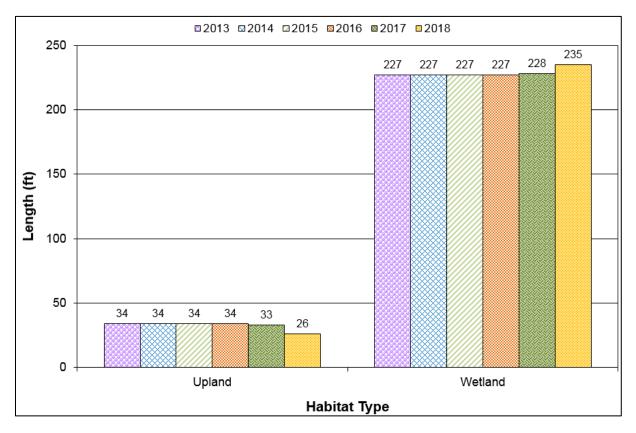


Chart 3-3. T-2 Map for the West Site Showing Vegetation Types From Transect Start (0 Foot) to End (261 Feet) From 2013 Through 2018.

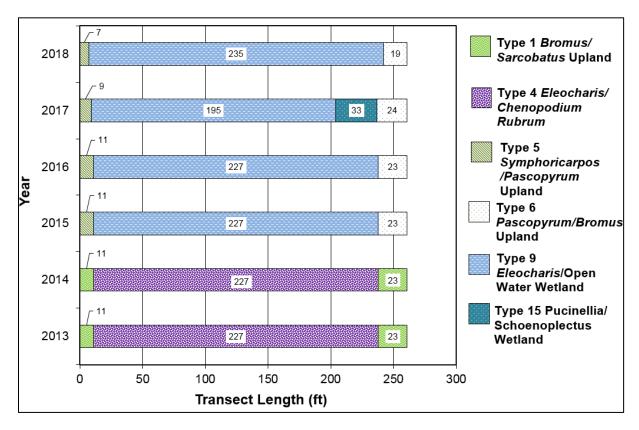


Chart 3-4. Length of Vegetation Communities Within T-2 for the West Site From 2013 Through 2018.

3.1.3 Soil

The Web Soil Survey for Rosebud County [US Department of Agriculture, 2011] indicates two soil complexes occurring within the project site. These soil complexes are identified as the Borollic Camborthids-Ustic Torrifluvents complex and Marvan soils. The Borollic Camborthids-Ustic Torrifluvents complex is 1 percent hydric and Marvan silty clay is 0 percent hydric [US Department of Agriculture, 2016]. The Marvan Series consist of very deep, well-drained, light (2.5Y 6/2) to dark (2.5Y 4/2) brownish gray clay mapped on alluvial fans, stream terraces, and drainageways [US Department of Agriculture, 1999].

Soil test pits were excavated at two locations, both within what was originally mapped as the Marvan silty clay soil series (DP-1W and DP-1U; Figure A-2, Appendix A). 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, 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.

3.1.4 Wetland Delineation

Two data points were used to determine the wetland and upland boundaries in 2018 (Figures A-2 and A-3, Appendix A). Vegetation, soil, and hydrology characteristics were documented on the Wetland Determination Data form (Appendix B). The total acreage of aquatic habitat at the West site in 2018 was 10.55 acres, which is an increase of 4.66 acres since 2017. The increase in aquatic habitat is directly related to the increased precipitation received in 2018 and a repaired dike structure that was working as intended. The 2018 acreage included approximately 1.29 acres of preexisting wetland, 2.54 acres of created wetland, and 6.72 acres of open water. Water levels within the impoundment during the site visit were at or very near the top of the dike and maximum inundation across the site was achieved in 2018. A summary of wetland habitat acreage at the West site is provided in Table 3-4.

Table 3-4. Wetland Habitat Acreages Delineated at the West Site

Wetland and Upland Habitats	2013 (acres)	2014 (acres)	2015 (acres)	2016 (acres)	2017 (acres)	2018 (acres)
Existing Wetland	1.29	1.29	1.29	1.29	1.29	1.29
Created Wetland	4.15	4.56	4.72	4.72	4.6	9.26 ^(a)
Total	5.44	5.85	6.01	6.01	5.89	10.55

⁽a) Created wetland acreage in 2018 includes 6.72 acres of open water.

3.1.5 Wildlife

A list of wildlife species that were observed directly or indirectly during the field surveys from 2013 through 2018 is presented in Table 3-5 and the Wetland Mitigation Site Monitoring form (Appendix B). The wildlife observations from 2018 included eight bird species, of which cliff swallows (*Petrochelidon pyrrhonota*) and Canada geese (*Branta canadensis*) were the most common. A family group of belted kingfishers (*Megaceryle alcyon*) was observed on the site during the field visit. No nesting structures have been installed at the site.

Table 3-5. Wildlife Species Observed at the West Site From 2013 Through 2018 (Page 1 of 2)

Common Name	Scientific Name				
Birds					
American Avocet	Recurvirostra americana				
American coot	Fulica americana				
American Goldfinch	Spinus tristus				
Bald Eagle	Haliaeetus leucocephalus				
Bank Swallow	Riparia				
Barn Swallow	Hirundo rustica				
Belted Kingfisher	Megaceryle alcyon				
Blue-winged Teal	Anas discors				
Brewer's Blackbird	Euphagus cyanocephalus				
Brown Thrasher	Toxostoma rufum				
Canada Goose	Branta candensis				
Cedar Waxwing	Bombycilla cedrorum				
Cliff Swallow	Petrochelidon pyrrhonota				
Common Nighthawk	Chordeiles minor				
Eastern Kingbird	Tyrannus				
Golden Eagle	Aquila chrysaetos				
Grasshopper Sparrow	Ammodramus savannarum				
Great Blue Heron	Ardea herodias				
House Wren	Troglodytes aedon				
Killdeer	Charadrius vociferus				
Lark Bunting	Calamospiza melanocorys				
Mallard	Anas platyrhynchos				
Mourning Dove	Zenaida macroura				
Northern Harrier	Circus cyaneus				
Orchard Oriole	Icterus spurius				
Red-Winged Blackbird	Agelaius phoeniceus				
Rock Wren	Salpinctes obsoletus				
Song Sparrow	Melospiza melodia				
Swainson's Hawk	Buteo swainsoni				
Turkey Vulture	Cathartes aura				
Western Kingbird	Tyrannus verticalis				
Western Meadowlark	Sturnella neglecta				
Western Sandpiper	Calidris mauri				
Wilson's Phalarope	Phalaropus tricolor				
Yellow Warbler	Dendroica petechia				
Fish					
Fish sp.	Unknown species				

Table 3-5. Wildlife Species Observed at the West Site From 2013 Through 2018 (Page 2 of 2)

Common Name	Scientific Name
Ма	mmals
Coyote	Canis latrans
Deer sp.	Odocoileus sp.
Meadow Vole	Microtus pennsylvanicus
Porcupine	Erethizon dorsatum
Raccoon	Procyon lotor
White-tailed Deer	Odocoileus virginianus
R	eptile
Plains Garter Snake	Thamnophis radix

Species that were identified in 2018 are in bold.

3.1.6 Functional Assessment

The results of the functional assessments from 2013 through 2018 are summarized in Table 3-6. The completed MWAM form for the West site is included in Appendix B. This site was evaluated as one AA (AA-1) that encompassed 10.55 acres in 2018. The AA was rated as a Category III wetland in 2018 with 60 percent of the total possible points. The site received a high rating for Montana Natural Heritage Program (MTNHP) species habitat based on the presence of grand redstem (*Ammannia robusta*) within the site, which was observed in 2013 and 2014. The site also received high ratings for short- and long-term surface water storage and recreation/education potential. The site achieved 69.1 functional units in 2018, which is a substantial increase of 27.6 units since 2017.

3.1.7 Photographic Documentation

Photographs from Photo Points 1 through 5 (PP1–PP5) (Figure A-3, Appendix A), the transect start and end points, and wetland determination data points are shown Appendix C.

3.1.8 Maintenance Needs

Infestations of two Priority 2B noxious weeds (Canada thistle and leafy spurge) were mapped within the project site (Figure A-3, Appendix A). Overall, weed infestations are down (< 1 percent cover) across the site from what was observed in 2017 because several previously mapped infestations were flooded in 2018, and weed-spraying activities likely have a positive impact. MDT has an ongoing weed-control program that assesses and employs weed-control measures within their wetland mitigation sites on a yearly basis. Weeds were sprayed at this site on July 2, 2018. In general, noxious weed cover has decreased because of yearly weed control by MDT.

The dike failure that occurred at the site during high flows in 2013 was repaired by MDT before the 2013 field survey and was intact when inspected in 2013. However, the structure appeared to be inadequately stabilized and susceptible to future failure. An examination of this structure in June 2014 indicated that the structure failed again during high spring flows, which eroded a channel down to the elevation of the original ephemeral thalweg. The dike was not repaired in 2015. MDT worked with the USACE to facilitate a permanent engineered repair for the dike. Because of

Table 3-6. Montana Wetland Assessment Method Summary for the West Site From 2013 Through 2018

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2013	2014	2015	2016	2017	2018
Listed/Proposed Threatened and Endangered (T&E) Species Habitat	Low (0.0)					
MTNHP Species Habitat	High (0.9)					
General Wildlife Habitat	Mod (0.5)	Mod (0.7)	E (1)	E (1)	Mod (0.7)	Mod (0.5)
General Fish/Aquatic Habitat	N/A	N/A	Mod (0.4)	Mod (0.4)	Low (0.3)	Low (0.3)
Flood Attenuation	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.6)	Mod (0.5)
Short- and Long-Term Surface Water Storage	High (1.0)	High (1.0)	High (1.0)	High (1.0)	High (0.9)	High (0.9)
Sediment/Nutrient/Toxicant Removal	Mod (0.4)	Mod (0.4)	Mod (0.6)	Mod (0.6)	High (1.0)	Mod (0.7)
Sediment/Shoreline Stabilization	Low (0.3)	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.6)	Mod (0.6)
Production Export/Food Chain Support	Mod (0.6)	High (0.9)	High (0.9)	High (0.9)	High (0.8)	Mod (0.7)
Groundwater Discharge/Recharge	Mod (0.7)	High (1.0)	High (1.0)	High (1.0)	Mod (0.7)	Mod (0.7)
Uniqueness	Mod (0.4)	Mod (0.5)	Mod (0.6)	Mod (0.6)	Mod (0.4)	Mod (0.5)
Recreation/Education Potential (bonus points)	High (0.15)					
Actual Points/Possible Points	5.45/10	6.75/10	7.65/11	7.65/11	7.05/11	6.45/11
% of Possible Score Achieved	54.5%	67.5%	69.6%	69.6%	64.0%	59.0%
Overall Category	III	III	II	II	III	III
Total Acreage of Assessed Wetlands Within Site Boundaries	5.44	5.85	6.01	6.01	5.89	10.55
Functional Units (acreage × actual points)	29.6	39.5	46.0	46.0	41.5	68.09

this coordination, MDT received an NWP #3 permit from the USACE to conduct repairs in the fall/winter of 2016/2017. The dike was reconstructed in the late spring of 2017 and was in good functioning condition in 2018; photographs of the dike are included in Appendix C. Fencing around the perimeter of the monitoring areas was in good condition in 2018.

3.1.9 Current Credit Summary

Approximately 10.55 aquatic habitat acres that consisted of approximately 1.29 acres of preexisting wetland habitat and 9.26 acres of created wetlands and open water habitat were delineated in 2018. Approximately 3.16 acres of upland habitat was mapped on the site in 2018. Table 3-7 presents the calculated credit acres for individual mitigation types with appropriate credit ratios applied using the USACE crediting system. The West site's types and ratios included preservation (4:1), creation (1:1), and upland buffer (5:1). The accrued credit acres at the West site in 2018 totaled 10.21, which is a substantial increase from 2017 (6.48 acres).

No quantitative performance measures or success criteria have been established for this wetland mitigation area. Monitoring requirements that are listed within the approved wetland mitigation plan are being satisfied. In general, the areas that were delineated as wetlands met the criteria for hydrophytic vegetation, hydric soil, and wetland hydrology. Noxious weed cover in 2018 was less than 1 percent site wide.

Table 3-7. Credit Summary for the West Site

Wetland	Ratio	2014 Delineated Acres	2014 Estimated Credit Acres	2015 Delineated Acres	2015 Estimated Credit Acres	2016 Delineated Acres	2016 Estimated Credit Acres	2017 Delineated Acres	2017 Estimated Credit Acres	2018 Delineated Acres	2018 Estimated Credit Acres
Preserved Wetland	4:1	1.29	0.32	1.29	0.32	1.29	0.32	1.29	0.32	1.29	0.32
Created Wetland	1:1	4.56	4.56	4.72	4.72	4.72	4.72	4.60	4.60	9.26	9.26
Upland Buffer	5:1	7.86	1.57	7.70	1.54	7.70	1.54	7.82	1.56	3.16	0.63
Total		13.71	6.45	13.71	6.58	13.71	6.58	13.71	6.48	13.71	10.21

3.2 MIDDLE SITE - SITE 2

3.2.1 Hydrology

The average total annual precipitation recorded at the Forsyth, Montana, weather station (243098) from 1975 through 2017 was 14.5 inches [Western Regional Climate Center, 2018]. Annual precipitation in recent years was 19.5 inches (2013), 18.3 inches (2014),10.0 inches (2015), 19.8 inches (2016), and 12.2 inches in 2017. These data indicate that above-average precipitation was recorded at the site in 2013, 2014, and 2016, while below-average precipitation was recorded in 2015 and 2017. In June 2017, the governor of Montana issued Executive Order 5-2017 that declared a drought emergency to exist in eastern Montana. Later, under Executive Order No. 6-2017, the governor declared a drought disaster in Rosebud County and 13 other counties in eastern Montana [DNRC, 2017]. The precipitation in 2018 from January through August totaled 19.5 inches at the Forsyth (243098) meteorological station. This 8-month total is approximately 8.6 inches above the long-term average (10.8 inches).

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 2018 field survey.

Two data points (DP-1W and DP-1U) were assessed to determine the upland and wetland boundaries (Wetland Determination Data forms, Appendix B). DP-1W is located in an area of the excavated depression that met the wetland criteria. Hydrologic indicators at the data point included surface soil cracks, and geomorphic position. DP-1U did not meet the wetland hydrology criteria.

3.2.2 Vegetation

A comprehensive list of the 57 species identified on site from 2013 through 2018 is presented in Table 3-8. No new species were identified at this site in 2018. The indicator status for all of the plants was derived from the 2016 NWPL [Lichvar et al., 2016]. Upland community Type 1 – Pascopyrum smithii/Helianthus annuus and wetland community Type 2 – Rumex crispus/Eleocharis palustris were identified in 2013 and 2014 and transitioned into upland community Type 3 – Pascopyrum smithii/Elymus canadensis and wetland community Type 4 – Puccinellia nuttalliana/Hordeum jubatum, respectively, in 2015 and persisted in 2018. The vegetation community boundaries are shown on Figure A-6 (Appendix A). The species composition for each community is discussed below and included on the Middle site's Wetland Mitigation Site Monitoring form (Appendix B).

Table 3-8. Vegetation Species Observed at the Middle Site From 2013 Through 2018 (Page 1 of 2)

Common Names	Scientific Names	GP Indicator Status ^(a)
Northern Water-Plantain	Alisma triviale	OBL
Field Meadow-Foxtail	Alopecurus pratensis	FACW
Perennial Ragweed	Ambrosia psilostachya	FACU
Grand Redstem	Ammannia robusta	OBL
Wild Oats	Avena fatua	UPL
Mexican-Fireweed	Bassia scoparia	FACU
California Brome	Bromus carinatus	UPL
Japanese Brome	Bromus arvensis	UPL
Cheatgrass	Bromus tectorum	UPL
Lamb's Quarters	Chenopodium album	FACU
Canada Thistle	Cirsium arvense	FACU
Field Bindweed	Convolvulus arvensis	UPL
Tufted Hair Grass	Deschampsia caespitosa	FACW
Slender Hair Grass	Deschampsia elongata	FAC
Large Barnyard Grass	Echinochloa crus-galli	FAC
Common Spike-Rush	Eleocharis palustris	OBL
Nodding Wild Rye	Elymus canadensis	FACU
Streamside Wild Rye	Elymus lanceolatus	FACU
Creeping Wild Rye	Elymus repens	FACU
Slender Wild Rye	Elymus trachycaulus	FACU
Leafy Spurge	Euphorbia esula	UPL
American Mannagrass	Glyceria grandis	OBL
Curly-Cup Gumweed	Grindelia squarrosa	UPL
Common Sunflower	Helianthus annuus	FACU
Foxtail Barley	Hordeum jubatum	FACW
Prickly Lettuce	Lactuca serriola	FAC
Clasping Pepperwort	Lepidium perfoliatum	FAC
Prairie Flax	Linum lewisii	UPL
Field Cottonrose	Logfia arvensis	UPL
Yellow Sweet Clover	Melilotus officinalis	FACU
Alkali Muhly	Muhlenbergia asperifolia	FAC
Common Panic Grass	Panicum capillare	FAC
Western Wheatgrass	Pascopyrum smithii	FACU
Flat-Stem Bluegrass	Poa compressa	FACU
Fowl Bluegrass	Poa palustris	FACW
Yard Knotweed	Polygonum aviculare	FACU

Table 3-8. Vegetation Species Observed at the Middle Site From 2013 Through 2018 (Page 2 of 2)

Common Names	Scientific Names	GP Indicator Status ^(a)
Eastern Cottonwood	Populus deltoides	FAC
Nuttall's Alkali Grass	Puccinellia nuttalliana	OBL
Prairie Coneflower	Ratibida columnifera	UPL
Prairie Rose	Rosa arkansana	FACU
Common Sheep Sorrel	Rumex acetosella	FAC
Curly Dock	Rumex crispus	FAC
Narrow-Leaf Willow	Salix exigua	FACW
Fragile Willow	Salix fragilis	FAC
Greasewood	Sarcobatus vermiculatus	FAC
Meadow False Rye Grass	Schedonorus pratensis	FACU
Saltmarsh Club-Rush	Schoenoplectus maritimus	OBL
Yellow Bristle Grass	Setaria pumila	FACU
Buffalo Bur	Solanum rostratum	UPL
Common Snowberry	Symphoricarpos albus	UPL
Salt-cedar	Tamarix chinensis	UPL
Field Pennycress	Thlaspi arvense	FACU
Meadow Goat's-beard	Tragopogon dubius	UPL
Broad-Leaf Cattail	Typha latifolia	OBL
Rough Cockleburr	Xanthium strumarium	FAC

(a) 2016 NWPL [Lichvar et al., 2016]

Upland Type 3 – *Pascopyrum smithii/Elymus canadensis* is located in upland that surrounds the excavated depression, adjacent to Montana Highway 12, and within the monitoring boundary. This community replaced upland community Type 1 – *Pascopyrum smithii/Helianthus annuus* because of a shift in species composition and their associated cover classes. The community was dominated by western wheatgrass and eastern cottonwood saplings, yellow sweet clover, and Japanese brome.

Wetland Type 4 – *Puccinellia nuttaliana/Hordeum jubatum* (Nutall's alkali grass/foxtail barley) was identified within the excavated depression. This community replaced wetland community Type 2 – *Rumex crispus/Eleocharis palustris* because of a shift in species composition and their associated cover classes. Common species included Nuttall's alkaligrass, foxtail barley, common spike-rush false meadow rye grass, and curly dock (*Rumex crispus*).

One vegetation transect, T-1, was established at the site that runs perpendicular to the linear excavated wetland (Figure A-5, Appendix A). Thirty-eight percent of the transect was located in wetland habitat. Vegetation transect results are detailed on the Middle site's Wetland Mitigation Site Monitoring form in Appendix B and are summarized in Table 3-9 and Charts 3-5 and 3-6. Photographs of the transect start and end points are provided in Appendix C.

Table 3-9. T-1 Data Summary for the Middle Site From 2013 Through 2018

Monitoring Year	2013	2014	2015	2016	2017	2018
Transect Length (feet)	50	50	50	50	50	50
Vegetation Community Transitions Along Transect	2	2	2	2	2	2
Vegetation Communities Along Transect	2	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1	1
Total Vegetative Species	16	20	21	11	17	17
Total Hydrophytic Species	6	8	7	3	4	5
Total Upland Species	10	12	14	8	13	12
Estimated % Total Vegetative Cover	40	50	90	85	83	85
Estimated % Unvegetated	60	50	10	15	17	15
% Transect Length Comprising Hydrophytic Vegetation Communities	52	52	30	30	38	38
% Transect Length Comprising Upland Vegetation Communities	48	48	70	70	62	62
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

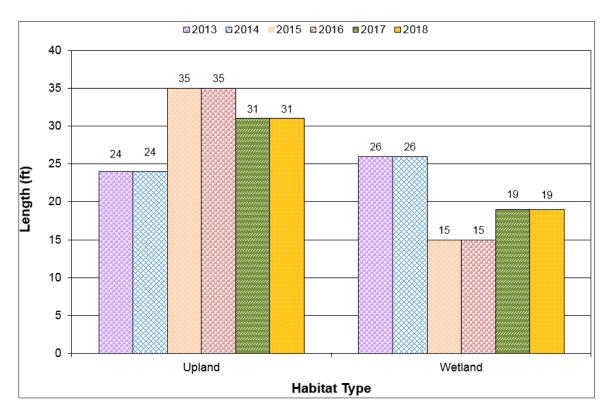


Chart 3-5. T-1 Map for the Middle Site Showing Vegetation Types From Transect Start (0 Foot) to Finish (50 Feet) From 2013 Through 2018.

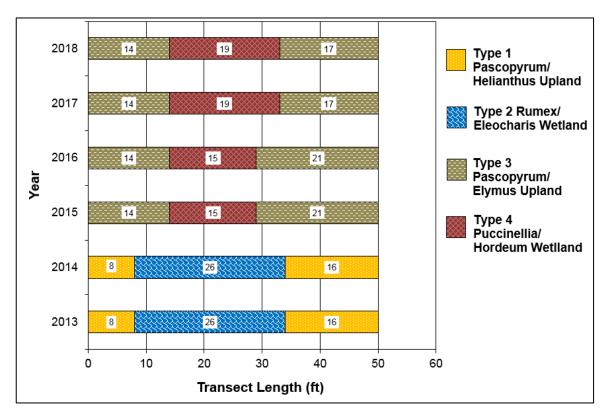


Chart 3-6. Length of Vegetation Communities Within T-1 at the Middle Site From 2013 Through 2018.

Infestations of two Priority 2B noxious weeds were identified at the site: salt-cedar and Canada thistle (Figure A-6, Appendix A). No woody vegetation was installed within the site. Revegetation efforts at the site included seeding a mixture of wand panic grass, American mannagrass, Baltic rush, Nebraska sedge, and Nuttall's alkaligrass after construction. Cottonwood seedlings have been observed along the margin of the wetland at the apparent edge of early-season inundation every year since 2013.

3.2.3 Soil

The Web Soil Survey for Rosebud County [US Department of Agriculture, 2011] indicates only one mapped soil for the project area, Harlem silty clay (0–2 percent slopes). These very deep, well-drained soils are seen on floodplains and are occasionally flooded.

Soil test pits were examined at two locations, both within what was originally mapped as the Harlem silty clay soil series (DP-1W and DP-1U; Figure A-5, Appendix A). 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. Soils at this pit currently lack redox features because the wetland is in the early stages of development. Given the dominance of hydrophytic vegetation and soil cracks on the surface, the depression appears to be saturated for extended periods during the growing season and hydric soil indicators will develop over time. 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 3/3) clay loam and did not meet the criteria for any hydric soil indicators.

3.2.4 Wetland Delineation

Two data points were used to determine the upland and wetland boundaries in 2018 (Figures A-5 and A-6, Appendix A). Vegetation, soil, and hydrology characteristics were documented on the Wetland Determination Data forms (Appendix B). The total acreage of aquatic habitat at the Middle site in 2018 was 0.58 acre within the 1.8-acre project area, as shown in Table 3-10. The floor of the excavated depression was identified as wetland based on the presence of positive wetland hydrology indicators, hydric soil, and the predominance of hydrophytic species.

Table 3-10. Wetland and Upland Habitat Acreages Delineated at the Middle Site From 2013 Through 2018

Wetland and Upland Habitats	2013 (acres)	2014 (acres)	2015 (acres)	2016 (acres)	2017 (acres)	2018 (acres)
Project Area	1.80	1.80	1.80	1.80	1.80	1.80
Created Wetland	0.49	0.49	0.49	0.49	0.58	0.58
Upland Buffer	1.31	1.31	1.31	1.31	1.22	1.22

3.2.5 Wildlife

A list of wildlife species observed directly and indirectly during the field surveys from 2013 through 2018 is shown in Table 3-11 and in the Wetland Mitigation Site Monitoring form (Appendix B). Because of high temperatures and mid-afternoon conditions, only one bird species, eastern kingbird (*Tyrannus tyrannus*), was observed within the mitigation site in 2018.

Table 3-11. Wildlife Species Observed at the Middle Site From 2013 Through 2018

Common Name	Scientific Name
Amphibians	and Reptiles
Frog sp.	
Plains Garter Snake	Thamnophis radix
Bi	rds
American Goldfinch	Spinus tristus
Common Nighthawk	Chordeiles minor
Eastern Bluebird	Sialia sialis
Eastern Kingbird	Tyrannus tyrannus
Killdeer	Charadrius vociferus
Mourning Dove	Zenaida macroura
Turkey Vulture	Cathartes aura
Western Kingbird	Tyrannus verticalis
Western Meadowlark	Sturnella neglecta
Mam	mals
Coyote	Canis latrans
Deer sp.	Odocoileus sp.
Raccoon	Procyon lotor

Species that were identified in 2018 are bolded.

3.2.6 Functional Assessment

The results of the functional assessments from 2013 through 2018 are summarized in Table 3-12. The Middle site's MWAM form is provided in Appendix B. The Middle site was evaluated as one AA and encompassed 0.58 acre. The prominent factor that adversely impacted the overall score and functional units at the site in 2013 was the general condition of the AA: a high percentage of bare ground, low vegetation cover, and low quality of wildlife habitat. The disturbance rating went from high in 2013 to moderate in 2014 based on the increased vegetation cover in disturbed areas. The Montana-listed S2 species of concern (grand redstem) was documented growing within the constructed wetland in 2013 and provided a high MTNHP rating. The flood attenuation rating was modified based on the lack of connection to Big Porcupine Creek. The sediment/shoreline stabilization increased in 2015 to reflect the increase in percent cover of wetland species with stability ratings greater than or equal to 6. Ratings for general wildlife habitat, sediment/ nutrient/toxicant removal, and uniqueness increased from 2013 to 2016 because of less disturbance and higher wetland vegetation cover; no change was observed from 2017 to 2018. This site achieved 42.2 percent of the possible score and a total of 2.0 functional units in 2018, which is an increase of 0.1 unit since 2016 because of the increase in wetland acreage. Continual development of the vegetation cover will result in increased functional units, although the small size of the AA will limit the total score.

Table 3-12. Montana Wetland Assessment Method Summary for the Middle Site From 2013
Through 2018

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2013	2014	2015	2016	2017	2018
Listed/Proposed T&E Species Habitat	Low (0.0)					
MTNHP Species Habitat	High (0.9)					
General Wildlife Habitat	Low (0.2)	Mod (0.4)				
General Fish/Aquatic Habitat	N/A	N/A	N/A	N/A	N/A	N/A
Flood Attenuation	High (1.0)	N/A	N/A	N/A	N/A	N/A
Short- and Long-Term Surface Water Storage	Mod (0.6)					
Sediment/Nutrient/Toxicant Removal	Mod (0.7)	Mod (0.7)	High (0.8)	High (0.8)	High (0.8)	High (0.8)
Sediment/Shoreline Stabilization	Low (0.2)	Low (0.2)	Mod (0.6)	Mod (0.6)	Mod (0.6)	Mod (0.6)
Production Export/Food Chain Support	Low (0.2)	Low (0.3)				
Groundwater Discharge/Recharge	N/A	N/A	N/A	N/A	N/A	N/A
Uniqueness	Low (0.1)	Low (0.2)				
Recreation/Education Potential (bonus points)	N/A	N/A	N/A	N/A	N/A	N/A
Actual Points/Possible Points	3.9/9	3.3/9	3.8/9	3.8/9	3.8/9	3.8/9
% of Possible Score Achieved	43.3%	36.7%	42.2%	42.2%	42.2%	42.2%
Overall Category	III	III	III	III	III	III
Total Acreage of Assessed Wetlands Within Site Boundaries	0.49	0.49	0.49	0.49	0.58	0.58
Functional Units (acreage × actual points)	1.9	1.6	1.9	1.9	2.2	2.2

3.2.7 Photographic Documentation

Photographs from Photo Points 1 and 2 (PP1 and PP2) (Figure A-5, Appendix A), the transect start and end points, and wetland determination data points are provided in Appendix C.

3.2.8 Maintenance Needs

Five minor infestations of Canada thistle, which is a Priority 2B noxious weed, were identified at this site in 2018 (Figure A-6, Appendix A) and should be controlled to prevent further spread and colonization. All infestations have a low cover class (1–5 percent). Fencing along the mitigation area was in good condition. No man-made water-control structures or bird boxes have been installed at this site.

3.2.9 Current Credit Summary

Table 3-13 shows the total delineated acres and credit acres estimated for the Middle site from 2014 through 2018. The 2018 wetland delineation was 0.58 acre, an increase of 0.09 acre since 2016. The site accrued 0.82 estimated credit acre in 2018. No performance standards were identified for this site. Two noxious weeds were identified within the mitigation site boundaries but exhibited very low percent areal cover (1–5 percent). The percent cover of native hydrophytes was low. The cover of wetland vegetation will increase if favorable hydrologic conditions persist.

Table 3-13. Credit Summary for the Middle Site

Wetland	Ratio	2014 Delineated Acres	2014 Estimated Credit Acres	2015 Delineated Acres	2015 Estimated Credit Acres	2016 Delineated Acres	2016 Estimated Credit Acres	2017 Delineated Acres	2017 Estimated Credit Acres	2018 Delineated Acres	2018 Estimated Credit Acres
Preserved Wetland	1:1	0.49	0.49	0.49	0.49	0.49	0.49	0.58	0.58	0.58	0.58
Upland Buffer	5:1	1.31	0.26	1.31	0.26	1.31	0.26	1.22	0.24	1.22	0.24
Total		1.80	0.75	1.80	0.75	1.80	0.75	1.80	0.82	1.80	0.82

3.3 EAST SITE - SITE 3

3.3.1 Hydrology

The average total annual precipitation recorded at the Forsyth, Montana, weather station (243098) from 1975 through 2017 was 14.5 inches [Western Regional Climate Center, 2018]. Annual precipitation in recent years was 19.5 inches (2013), 18.3 inches (2014),10.0 inches (2015), 19.8 inches (2016), and 12.2 inches in 2017. These data indicate that above-average precipitation was recorded at the site in 2013, 2014, and 2016, while below-average precipitation was recorded in 2015 and 2017. In June 2017, the governor of Montana issued Executive Order 5-2017 that declared a drought emergency to exist in eastern Montana. Later, under Executive Order No. 6-2017, the governor declared a drought disaster in Rosebud County and 13 other counties in eastern Montana [DNRC, 2017]. The precipitation in 2018 from January through August totaled 19.5 inches at the Forsyth (243098) meteorological station. This 8-month total is approximately 8.6 inches above the long-term average (10.8 inches).

The East site is very similar to the Middle site. The main sources of hydrology at the 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.

Four data points (DP-1W, DP-1U, DP-2W, and DP-2U) were assessed to determine the upland and wetland boundaries (Wetland Determination Data forms, Appendix B). DP-1W is located in the northwest end of the site in an area that met the wetland criteria. Positive indicators of wetland hydrology at this data point included a FAC test, soil cracks, and geomorphic position. No signs of wetland hydrology were observed at DP-1U, which is located upslope of the wetland boundary. DP-2W is located in the southeast end of the site in an area that met the wetland criteria. Positive indicators of wetland hydrology at this data point included a FAC test, soil cracks, and geomorphic position. No signs of wetland hydrology were observed at DP-2U, which is located upslope of the wetland boundary.

3.3.2 Vegetation

A comprehensive list of 58 species compiled during the field surveys from 2013 through 2018 is presented in Table 3-14. One new plant species (freshwater cordgrass [Spartina pectinate]) was observed in 2018. The indicator status for all of the plants was derived from the 2016 NWPL [Lichvar et al., 2016]. Two community types were identified and mapped at this site in 2018 (Figure A-9, Appendix A) and included upland Type 3 – Pascopyrum smithii/Elymus spp. and wetland Type 4 – Hordeum jubatum/Eleocharis palustris. The species composition for each community is included on the East site's Wetland Mitigation Site Monitoring form (Appendix B) and discussed in this section.

Table 3-14. Vegetation Species Observed at the East Site From 2013 Through 2018 (Page 1 of 2)

Scientific Names	Common Names	GP Indicator Status ^(a)
Crested Wheatgrass	Agropyron cristatum	UPL
Algae, green	Algae, green	NL
Northern Water-Plantain	Alisma triviale	OBL
Creeping Meadow-Foxtail	Alopecurus arundinaceus	FACW
Field Meadow-Foxtail	Alopecurus pratensis	FACW
Perennial Ragweed	Ambrosia psilostachya	FACU
Grand Redstem	Ammannia robusta	OBL
Fringed Sage	Artemisia frigida	UPL
Mexican-Fireweed	Bassia scoparia	FACU
California Brome	Bromus carinatus	UPL
Smooth Brome	Bromus inermis	UPL
Japanese Brome	Bromus arvensis	UPL
Cheatgrass	Bromus tectorum	UPL
Lamb's Quarters	Chenopodium album	FACU
Field Bindweed	Convolvulus arvensis	UPL
Herb Sophia	Descurainia sophia	UPL
Large Barnyard Grass	Echinochloa crus-galli	FAC
Common Spike-Rush	Eleocharis palustris	OBL
Nodding Wild Rye	Elymus canadensis	FACU
Creeping Wild Rye	Elymus repens	FACU
Slender Wild Rye	Elymus trachycaulus	FACU
Wild Rye	Elymus sp.	UPL
Field Fluffweed	Filago arvensis	UPL
Tall Mannagrass	Glyceria elata	OBL
Curly-Cup Gumweed	Grindelia squarrosa	UPL
Common Sunflower	Helianthus annuus	FACU
Needle-and-Thread	Hesperostipa comata	UPL
Foxtail Barley	Hordeum jubatum	FACW
Prickly Lettuce	Lactuca serriola	FAC
Clasping Pepperwort	Lepidium perfoliatum	FAC
Prairie Flax	Linum lewisii	UPL
Alfalfa	Medicago sativa	UPL
Yellow Sweet Clover	Melilotus officinalis	FACU
Alkali Muhly	Muhlenbergia asperifolia	FACW
Western Wheatgrass	Pascopyrum smithii	FACU

Table 3-14. Vegetation Species Observed at the East Site From 2013 Through 2018 (Page 2 of 2)

Scientific Names	Common Names	GP Indicator Status ^(a)
Flat-stem Bluegrass	Poa compressa	FACU
Kentucky Bluegrass	Poa pratensis	FACU
Yard Knotweed	Polygonum aviculare	FACU
Eastern Cottonwood	Populus deltoides	FAC
Nuttall's Alkali Grass	Puccinellia nuttalliana	OBL
Prairie Coneflower	Ratibida columnifera	UPL
Common Sheep Sorrel	Rumex acetosella	FAC
Curly Dock	Rumex crispus	FAC
Arum-Leaf Arrowhead	Sagittaria cuneata	OBL
Narrow-Leaf Willow	Salix exigua	FACW
Fragile Willow	Salix fragilis	FAC
Saltmarsh Club-Rush	Schoenoplectus maritimus	OBL
Tall Hedge-Mustard	Sisymbrium altissimum	FACU
Buffalo Bur	Solanum rostratum	UPL
Freshwater Cord Grass	Spartina pectinata	FACW
Salt-Cedar	Tamarix chinensis	UPL
Common Dandelion	Taraxacum officinale	FACU
Field Pennycress	Thlaspi arvense	FACU
Meadow Goat's-Beard	Tragopogon dubius	UPL
Narrow-Leaf Cattail	Typha angustifolia	OBL
Broad-Leaf Cattail	Typha latifolia	OBL
Speedwell	Veronica sp.	UPL

⁽a) 2016 NWPL [Lichvar et al., 2016]. New species that were identified in 2018 are bolded.

Upland community Type 3 represented the upland areas that surround the excavated wetland, as well as the upland area in the center of the excavated depression. Dominant species included western wheatgrass, nodding wild rye (*Elymus canadensis*), and slender wild rye (*Elymus trachycaulus*).

Wetland Type 4 – *Hordeum jubatum/Eleocharis palustris* is located within the excavated depression in the eastern and western portions of the site. The community was dominated by foxtail barley, common spike-rush, and western wheatgrass. Other species observed included saltmarsh club-rush, field meadow-foxtail, and Kentucky bluegrass (*Poa pratensis*). Seedlings of narrow-leaf willows (*Salix exigua*), fragile willows, and cottonwood persisted in this community in 2018.

Vegetation cover was measured along two transects: one on each end of the East site (Figure A-8, Appendix A). Data recorded for T-1 are summarized in Table 3-15 and Charts 3-7 and 3-8. The East site's Wetland Mitigation Site Monitoring form (Appendix B) also displays this site's data.

Photographs of the transect start and end points are provided in Appendix C. T-1 is located at the northwestern end of the site and extends 125 feet. This transect begins at the fenced boundary in upland community Type 3 – *Pascopyrum smithii/Elymus* spp., crosses wetland community Type 4 – *Hordeum jubatum/Eleocharis palustris* and terminates in upland community Type 3. Upland habitat along the edge of the constructed wetland has transitioned to a climax community. Wetland habitat along this transect is not expected to increase considerably because of the distinct topographic break that defines the wetland boundary.

Table 3-15. T-1 Data Summary for the East Site From 2013 Through 2018

Monitoring Year	2013	2014	2015	2016	2017	2018
Transect Length (feet)	125	125	125	125	125	125
Vegetation Community Transitions Along Transect	2	2	2	2	2	2
Vegetation Communities Along Transect	2	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1	1
Total Vegetative Species	16	24	26	22	17	17
Total Hydrophytic Species	5	7	8	9	7	7
Total Upland Species	11	17	18	11	10	10
Estimated % Total Vegetative Cover	40	40	90	90	95	95
Estimated % Unvegetated	60	60	10	10	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	51.2	52	50	50	50	52
% Transect Length Comprising Upland Vegetation Communities	48.8	48	50	50	50	48
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

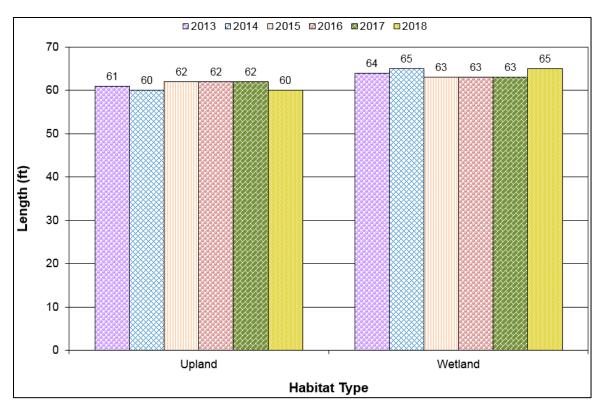


Chart 3-7. T-1 Map for the East Site Showing Vegetation Types From Transect Start (0 Foot) to Finish (125 Feet) From 2013 Through 2018.

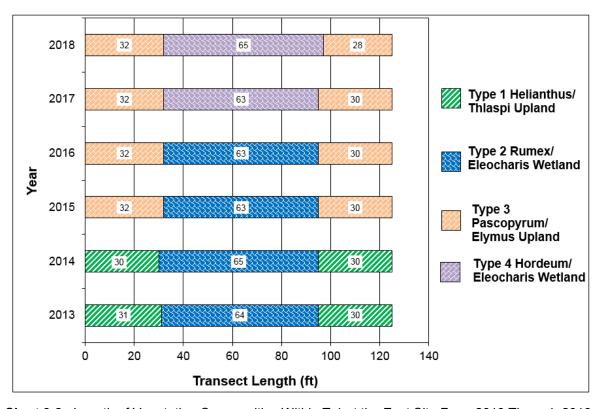


Chart 3-8. Length of Vegetation Communities Within T-1 at the East Site From 2013 Through 2018.

T-2 is very similar to T-1 and is located at the southeastern end of the site. This transect begins at the fenced boundary in upland community Type 3 - Pascopyrum smithii/Elymus spp., crosses wetland community Type 4 - Horeum jubatum/Eleocharis palustris, and terminates in upland community Type 3. T-2 data are summarized in Table 3-16 and Charts 3-9 and 3-10.

Table 3-16. T-2 Data Summary for the East Site From 2013 Through 2018

Monitoring Year	2013	2014	2015	2016	2017	2018
Transect Length (feet)	181	181	181	181	181	181
Vegetation Community Transitions Along Transect	2	2	2	2	2	2
Vegetation Communities Along Transect	2	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1	1
Total Vegetative Species	12	24	26	26	11	14
Total Hydrophytic Species	5	9	8	6	4	6
Total Upland Species	7	15	18	20	7	8
Estimated % Total Vegetative Cover	40	55	90	94	98	98
Estimated % Unvegetated	60	45	10	6	2	2
% Transect Length Comprising Hydrophytic Vegetation Communities	63	63	44	44	55	55
% Transect Length Comprising Upland Vegetation Communities	37	37	56	56	45	45
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

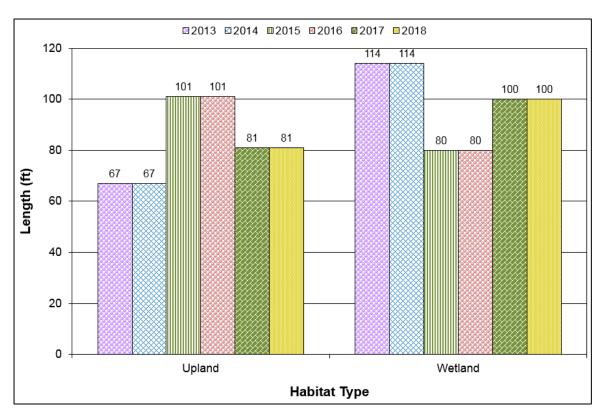


Chart 3-9. T-2 Map for the East Site Showing Vegetation Types From Transect Start (0 Foot) to Finish (181 Feet) From 2013 Through 2018.

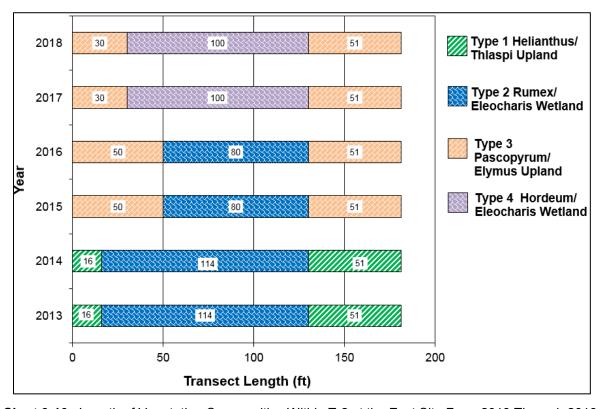


Chart 3-10. Length of Vegetation Communities Within T-2 at the East Site From 2013 Through 2018.

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 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.

3.3.3 Soil

The Web Soil Survey for Rosebud County [US Department of Agriculture, 2011] indicates only one mapped soil for the project area: Harlem silty clay (0–2 percent slopes). These very deep, well-drained soils are seen on floodplains and are occasionally flooded. This map unit series is identified on the *Montana Hydric Soil List* [Natural Resources Conservation Service, 2014].

Soil test pits were examined at four locations, all 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). 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 (2.5 Y 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 (2.5 Y 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 10 YR 3/2 clay loam with bright 10 YR 5/8 redoximorphic concentrations along pore linings. The soil met the criteria for depleted matrix (F3) and classification as a hydric soil. DP-2U is located approximately 10 feet southwest of DP-2W on the side slope of the excavated basin in the adjacent uplands. The soil profile revealed a very dark grayish brown (2.5 Y 3/2) clay loam and did not meet the criteria for any hydric soil indicators.

3.3.4 Wetland Delineation

Four data points were evaluated in 2018 to determine the wetland and upland boundaries at the site (Figures A-8 and A-9, Appendix A). Vegetation, soil, and hydrology characteristics were documented on the Wetland Determination Data forms (Appendix B). The total acreage of aquatic habitat at the East site in 2018 was 0.56 acre, which is an increase of 0.13 acre since 2017 (0.43 acre), which is shown in Table 3-17. Ground surface elevation may be contributing to the development of an upland community within the central area of the excavation, which appears to be slightly higher than the surrounding ground.

Table 3-17. Wetland/Upland Habitat Acreages Delineated at the East Site From 2013 Through 2018

Wetland and Upland Habitats	2013 (acres)	2014 (acres)	2015 (acres)	2016 (acres)	2017 (acres)	2018 (acres)
Project Area	2.74	2.74	2.74	2.74	2.74	2.74
Created Wetland	1.19	1.19	0.46	0.43	0.43	0.56
Upland Buffer	1.55	1.55	2.28	2.31	2.31	2.18

3.3.5 Wildlife

A list of wildlife species observed directly and indirectly at the site during the field survey from 2013 through 2018 is presented in Table 3-18 and the Wetland Mitigation Site Monitoring form (Appendix B). Only one bird species (cliff swallow) was observed at the site because of the midafternoon survey time and high mid-summer temperatures.

Table 3-18. Wildlife Species Observed at the East Site From 2013 Through 2018

Common Name	Scientific Name						
Amphibians							
Northern Leopard Frog	Rana pipiens						
Birds							
American Goldfinch	Spinus tristus						
American Robin	Turdus migratorius						
Bald Eagle	Haliaeetus leucocephalus						
Bank Swallow	Riparia						
Barn Swallow	Hirundo rustica						
Cliff Swallow	Petrochelidon pyrrhonota						
Common Grackle	Quiscalus quiscula						
Common Nighthawk	Chordeiles minor						
Eastern Kingbird	Tyrannus tyrannus						
Field Sparrow	Spizella pusilla						
Killdeer	Charadrius vociferus						
Lark Sparrow	Chondestes grammacus						
Mourning Dove	Zenaida macroura						
Red-Winged Blackbird	Agelaius phoeniceus						
Turkey Vulture	Cathartes aura						
Vesper Sparrow	Pooecetes gramineus						
Western Kingbird	Tyrannus verticalis						
Western Meadowlark	Sturnella neglecta						
Western Sandpiper	Calidris mauri						
Ма	mmals						
Coyote	Canis latrans						
Deer sp.	Odocoileus sp.						
Raccoon	Procyon lotor						
Re	eptiles						
Western Hog-nosed Snake	Heterodon nasicus						

Species that were identified in 2018 are in bold.

3.3.6 Functional Assessment

The results of the functional assessments from 2013 through 2018 are summarized in Table 3-19. The completed East site's MWAM form is included in Appendix B. The total aquatic habitat developed to date within the 2.74-acre project area is 0.56 acre. The site was evaluated as one AA

and rated as a Category III wetland with 48.9 percent of the total possible points. The Montana-listed S2 species of concern (grand redstem and western hog-nosed snake) were documented in 2013 and 2015, respectively, and provided a high MTNHP species habitat rating. The disturbance rating improved from high in 2013 to moderate from 2014 through 2018. Sediment/shoreline stabilization improved from a low to moderate rating from 2015 to 2016 because of an increase in percent cover of wetland species with stability ratings greater than or equal to 6. Short- and long-term surface water storage was given a low rating in 2015 because of the decrease in water contained in the AA's wetlands that are subject to periodic flooding/ponding. The site achieved 2.5 functional units in 2018.

Table 3-19. Montana Wetland Assessment Method Summary for the Middle Site From 2013
Through 2018

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2013	2014	2015	2016	2017	2018
Listed/Proposed T&E Species Habitat	Low (0.0)					
MTNHP Species Habitat	High (0.9)					
General Wildlife Habitat	Low (0.2)	Mod (0.4)				
General Fish/Aquatic Habitat	N/A	N/A	N/A	N/A	N/A	N/A
Flood Attenuation	N/A	N/A	N/A	N/A	N/A	N/A
Short- and Long-Term Surface Water Storage	Mod (0.6)	Mod (0.6)	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)
Sediment/Nutrient/Toxicant Removal	Mod (0.7)	High (1.0)				
Sediment/Shoreline Stabilization	Low (0.2)	Low (0.2)	Mod (0.6)	Mod (0.6)	Mod (0.6)	Mod (0.6)
Production Export/Food Chain Support	Low (0.2)	Low (0.3)				
Groundwater Discharge/Recharge	Mod (0.7)					
Uniqueness	Low (0.1)	Low (0.2)				
Recreation/Education Potential (bonus points)	N/A	N/A	N/A	N/A	N/A	N/A
Actual Points/Possible Points	3.6/9	4.3/9	4.4/9	4.4/9	4.4/9	4.4/9
% of Possible Score Achieved	40.0%	47.8%	48.9%	48.9%	48.9%	48.9%
Overall Category	III	III	III	III	III	III
Total Acreage of Assessed Wetlands Within Site Boundaries	1.19	1.19	0.46	0.43	0.43	0.56
Functional Units (acreage × actual points)	4.3	5.1	2.0	1.9	1.9	2.5

3.3.7 Photographic Documentation

Photographs of Photo Points 1 through 3 (PP1–PP3), the transect start and end points, and the wetland determination data points (Figure A-7, Appendix A) are provided in Appendix C.

3.3.8 Maintenance Needs

Low infestations of noxious weeds continue to persist at the site (Figure A-8, Appendix A). Yearly control measures will continue to eliminate noxious weed infestations. The fence along the eastern side of the site was in good working order. No man-made water-control structures have been installed at the East site. A survey may be required to determine if the central area of the excavated area is higher than the northwestern and southeastern ends.

3.3.9 Current Credit Summary

The wetland acreage delineated in 2018 totaled 0.56 acre, which was an increase of 0.13 acre since 2017. This increase was likely driven by the above-average precipitation received at the site in 2018. Upland buffer accounted for 2.18 acres within the East site monitoring boundary. Applying standard wetland compensatory mitigation ratios [USACE, 2005], the site attained an estimated 1.00 credit acre in 2018, which is shown in Table 3-20. No performance standards have been established for this site.

Table 3-20. Credit Summary for the East Site

Wetland	Ratio	2014 Delineated Acres	2014 Estimated Credit Acres	2015 Delineated Acres	2015 Estimated Credit Acres	2016 Delineated Acres	2016 Estimated Credit Acres	2017 Delineated Acres	2017 Estimated Credit Acres	2018 Delineated Acres	2018 Estimated Credit Acres
Created Wetland	1:1	1.19	1.19	0.46	0.46	0.43	0.43	0.43	0.43	0.56	0.56
Upland Buffer	5:1	1.55	0.31	2.28	0.46	2.31	0.46	2.31	0.46	2.18	0.44
Total		2.74	1.50	2.74	0.92	2.74	0.89	2.74	0.89	2.74	1.00

3.4 COMPREHENSIVE CREDIT SUMMARY FOR FORSYTH - NORTHWEST

The wetland areas that were impacted during construction of the Volborg – North and South project in 2004 totaled 6.80 acres. Per the USACE requirement, the impacts were to be mitigated at a 1.5:1 ratio. During the construction of the FNW project, an additional 2.18 acres of unavoidable wetland impacts occurred. Credits that were generated by the 1999 construction of the Treasure County Line site have been applied to the FNW debits at a 1:1 ratio based on the development of this mitigation wetland site before the impacts actually occurred.

The total credits estimated for all four FNW sites in 2018 was 14.60 acres (Table 3-21). This value was 1.82 credit acres in excess of the required 12.78 credit acres. The increase in credit acreage in 2018 is a direct result of the improved dike structure at the west site and significantly higher than average precipitation in the first half of 2018, which led to maximum inundation at the west site during monitoring. Minimal potential exists for wetland expansion at the Middle and Treasure County Line sites because development has already extended to near the margins of the excavated footprint. No quantitative metrics or performance criteria are associated with the success of these mitigation sites. The monitoring requirements that were identified within the approved mitigation plan are being satisfied.

Table 3-21. 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
VVCSt	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	24.14	Total Credits	14.60	
Net Credits				

⁽a) The wetland mitigation monitoring plan for FNW [2012] indicates that credits created at the Treasure County Line site will be applied to FNW impacts at a 1:1 ratio because the mitigation site was constructed before the impacts.

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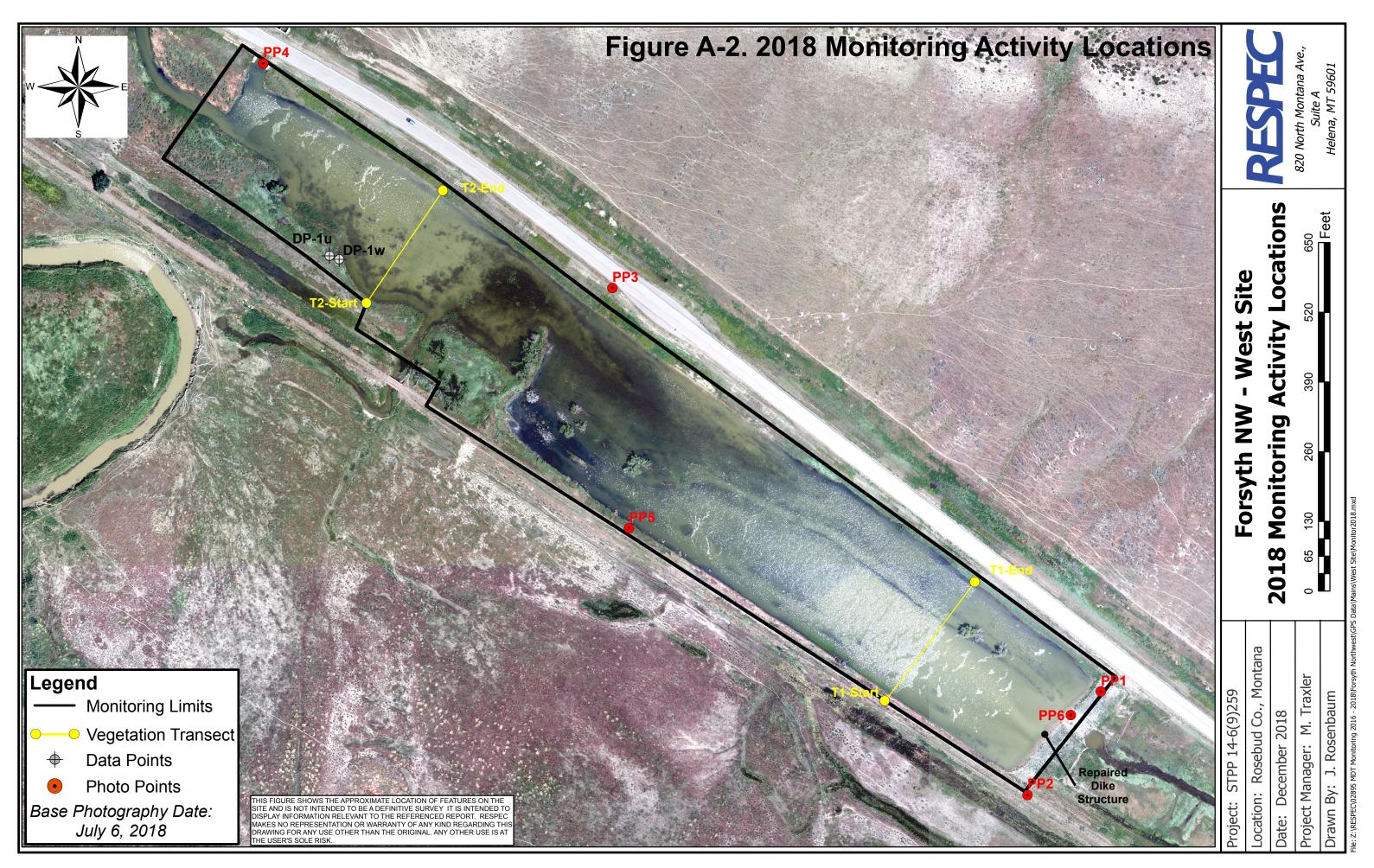
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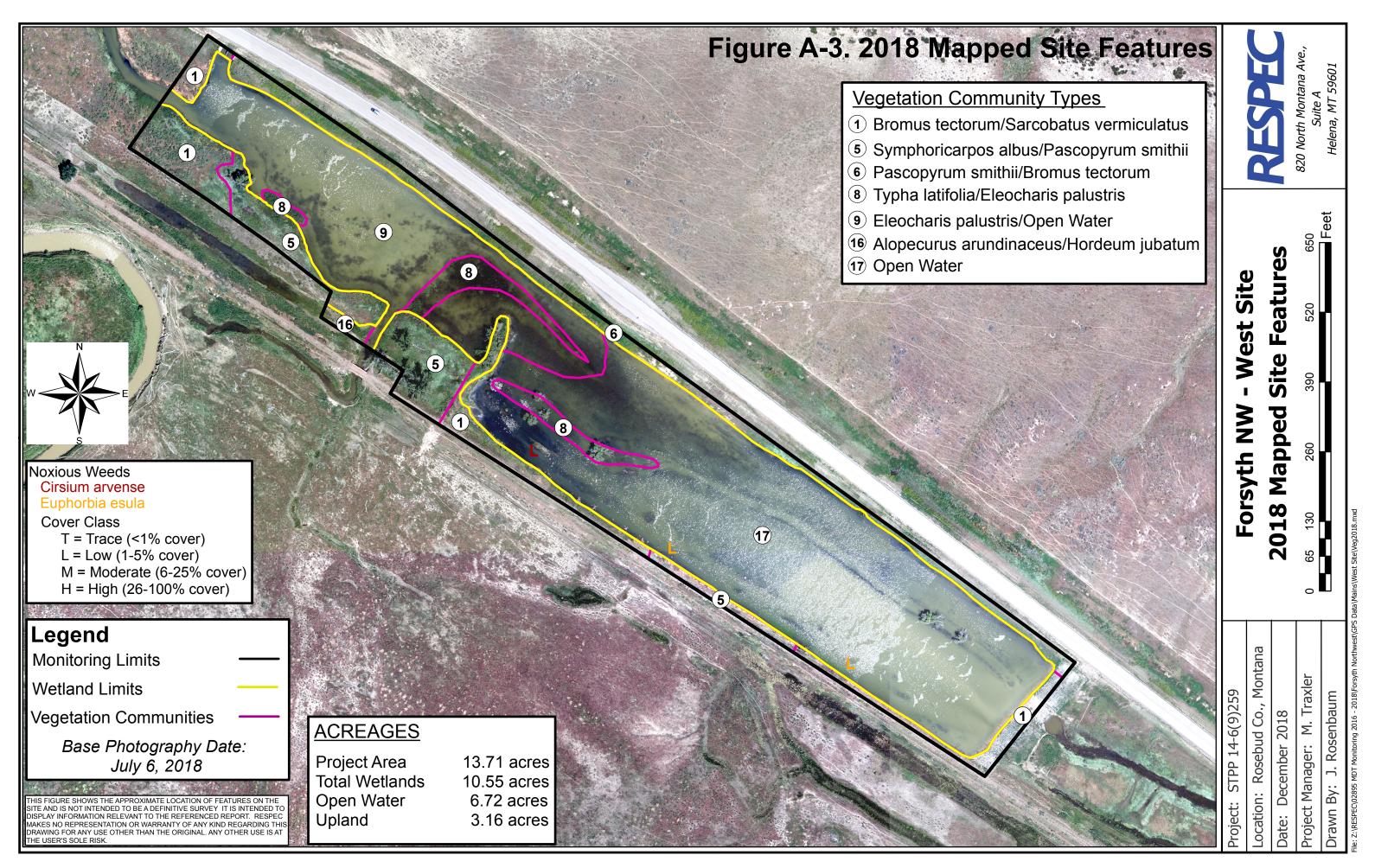
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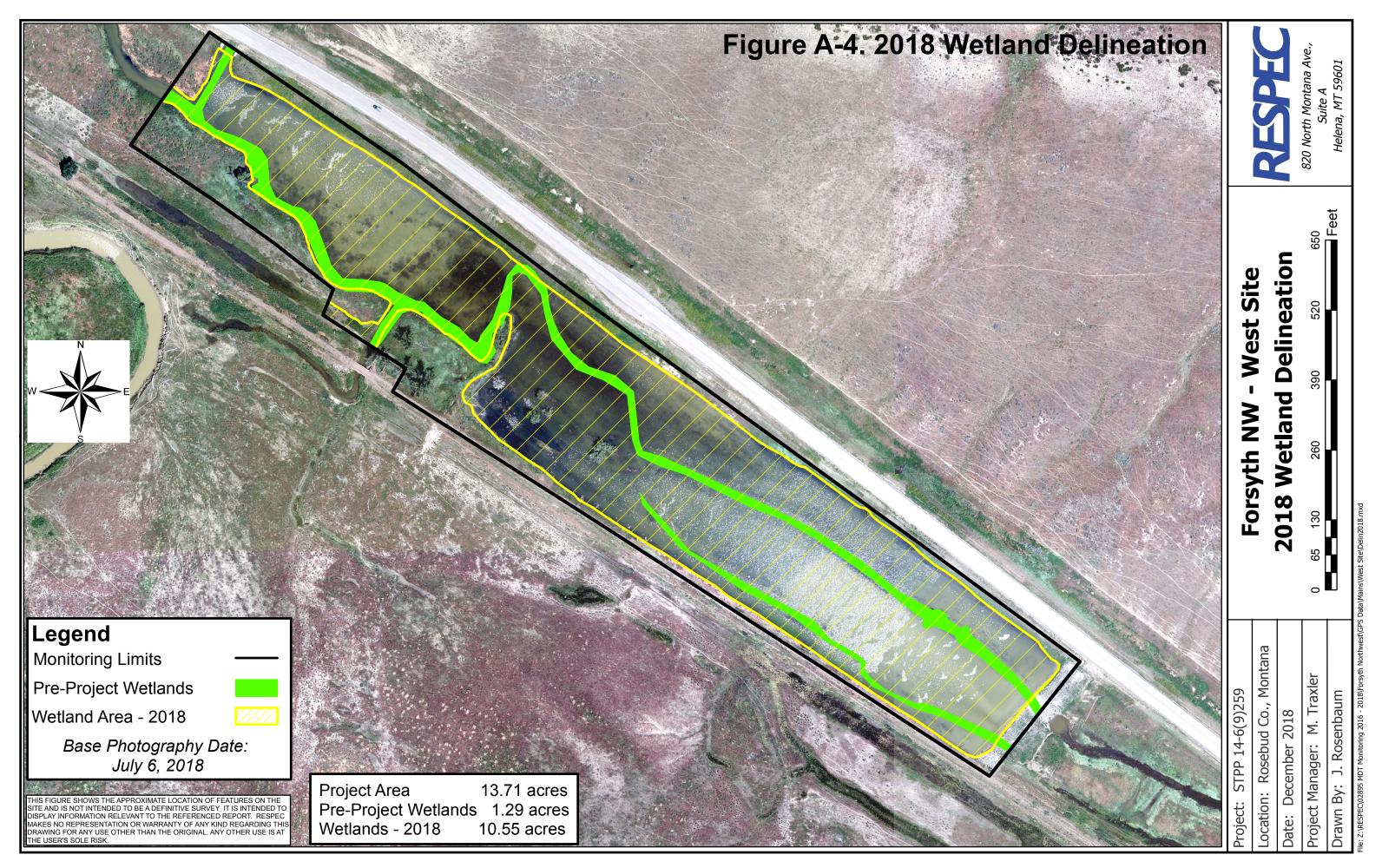
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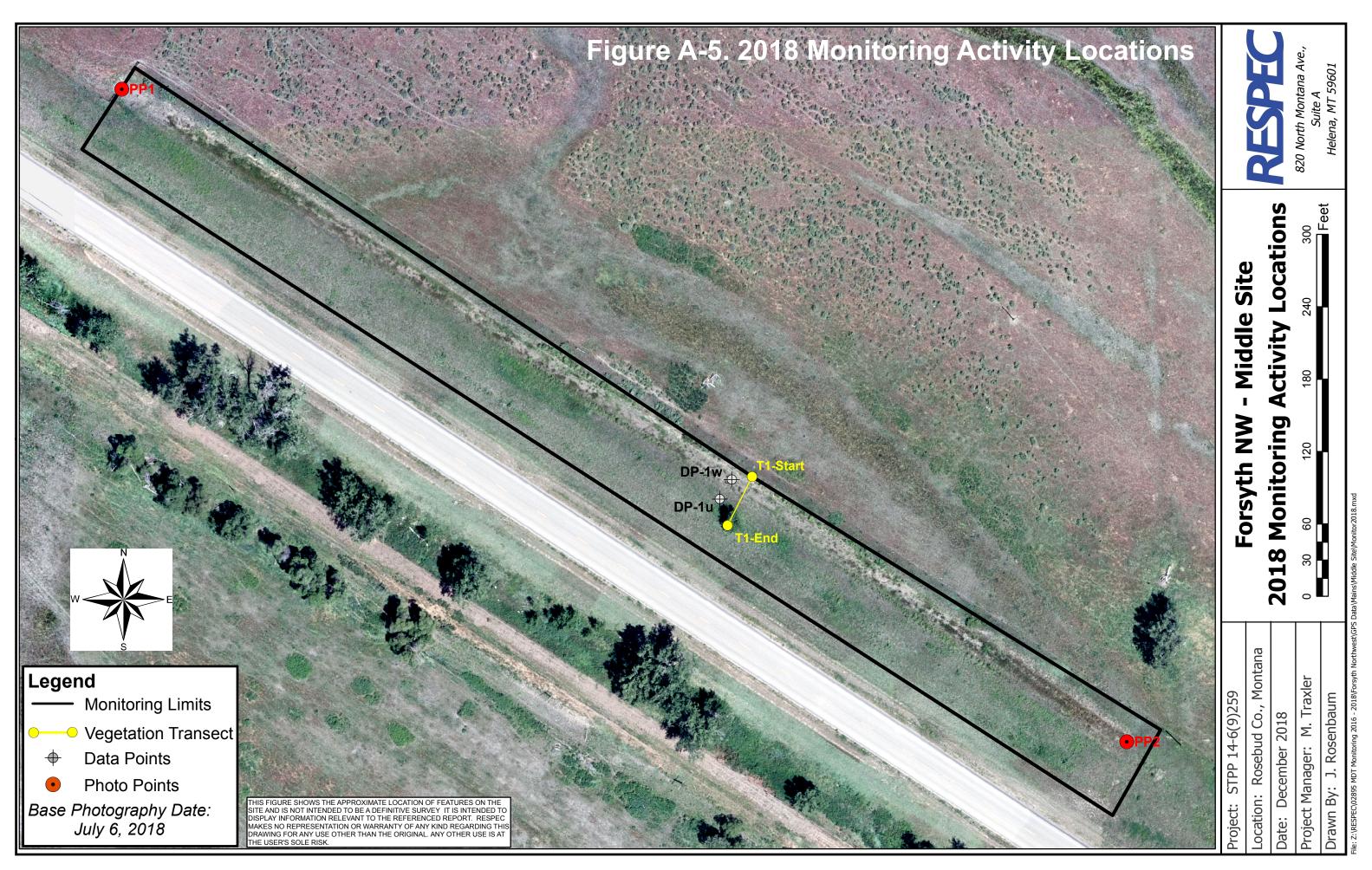
APPENDIX A PROJECT AREA MAPS

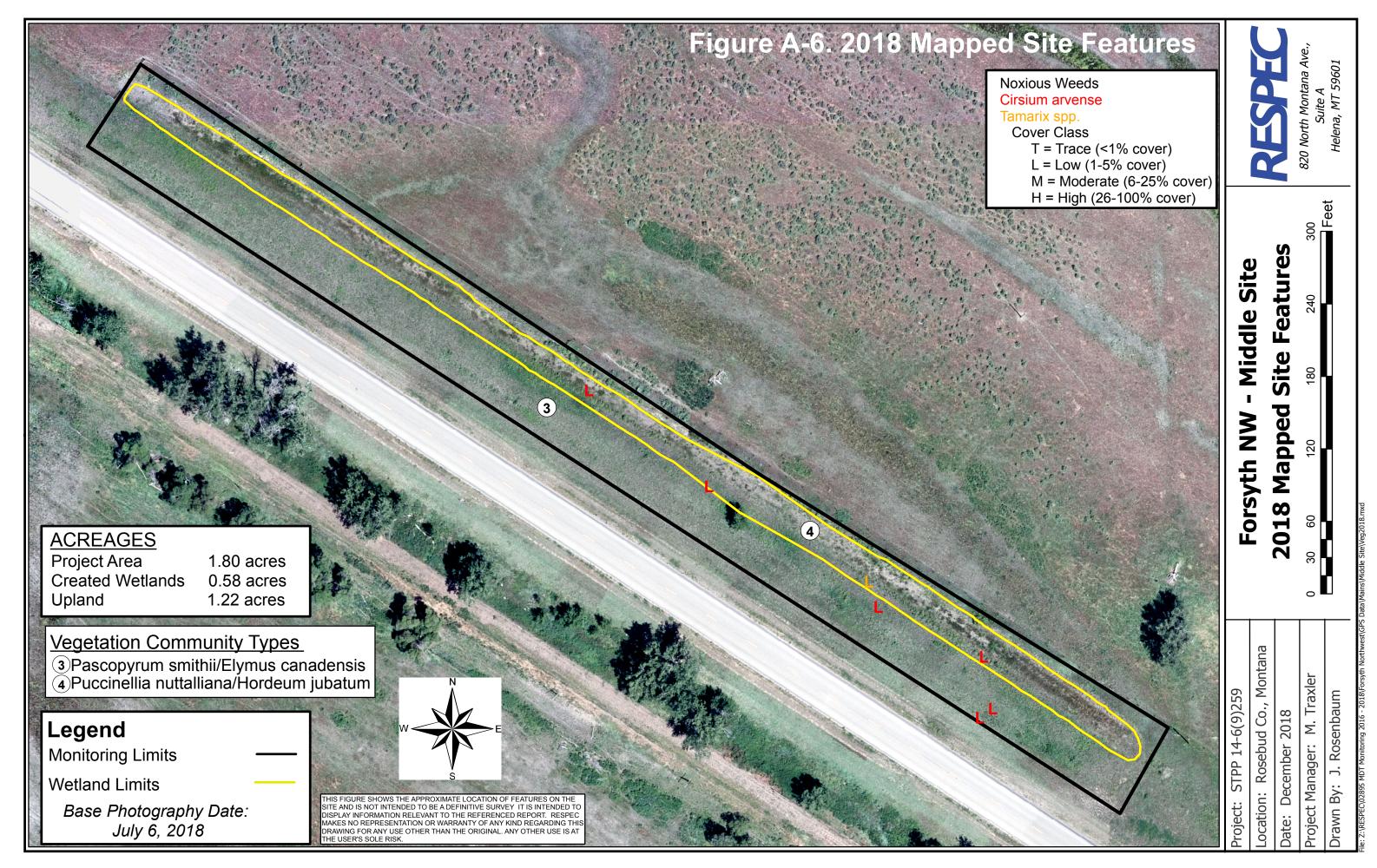
MDT Wetland Mitigation Monitoring Forsyth – Northwest Rosebud County, Montana

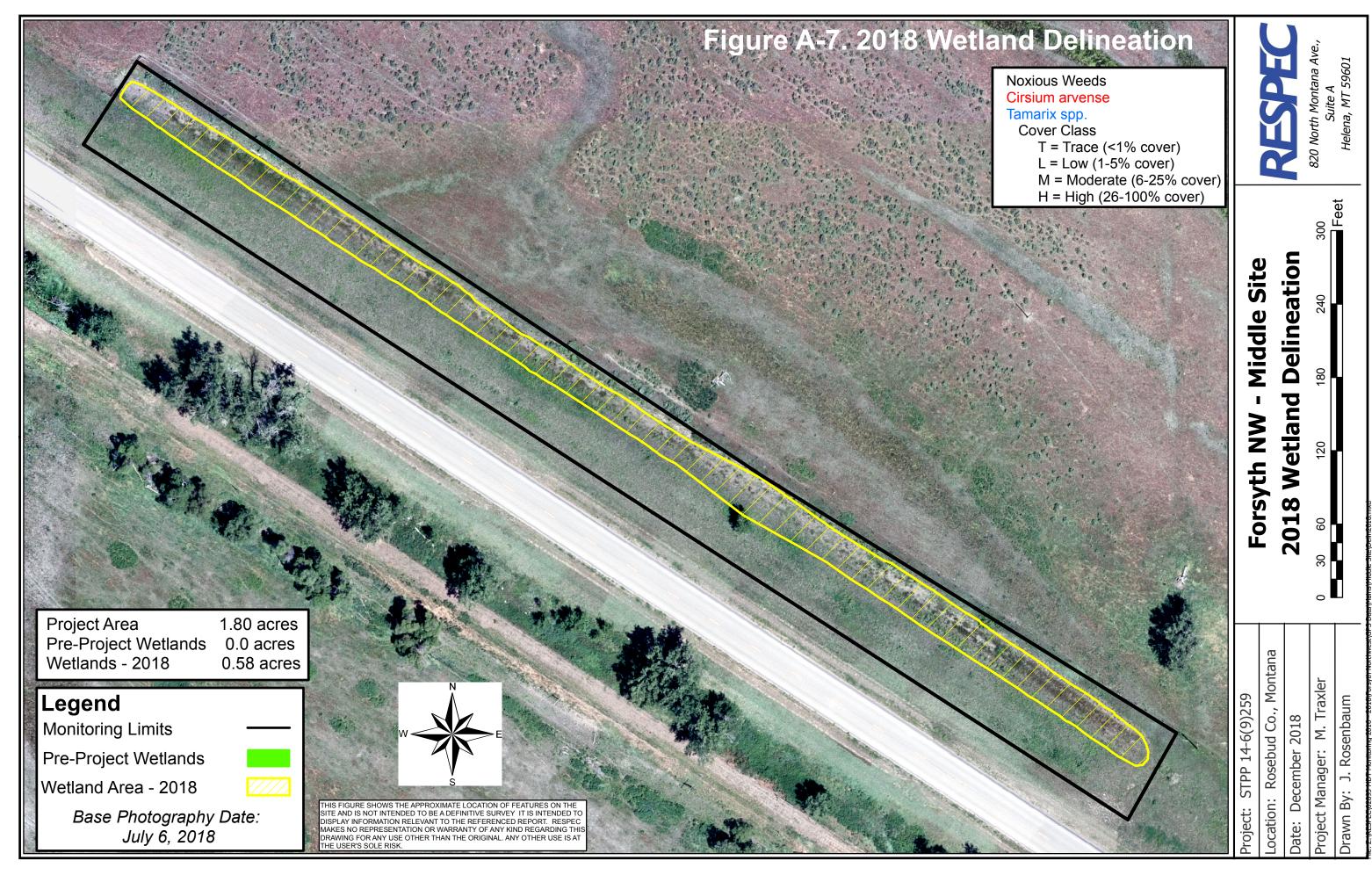


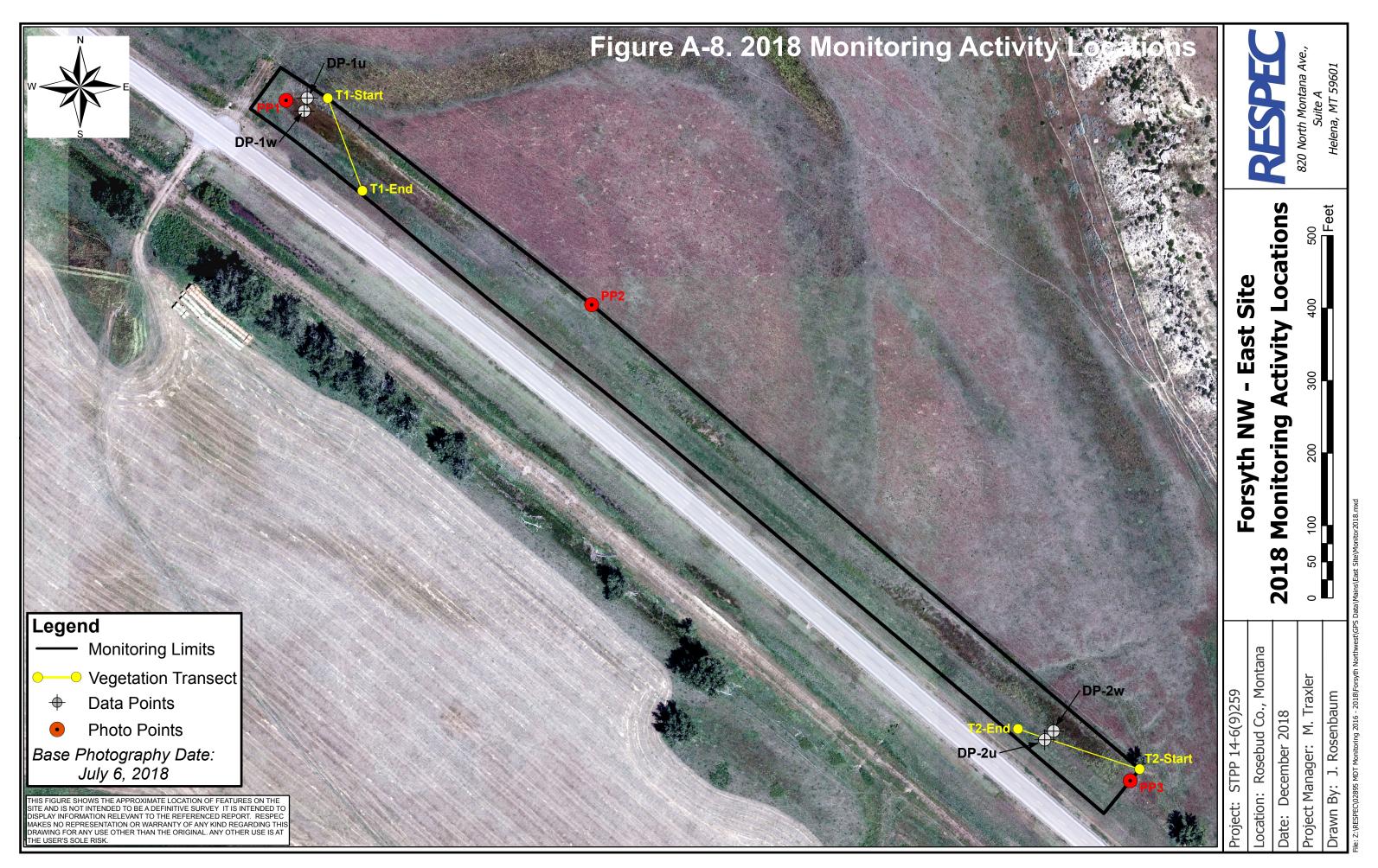


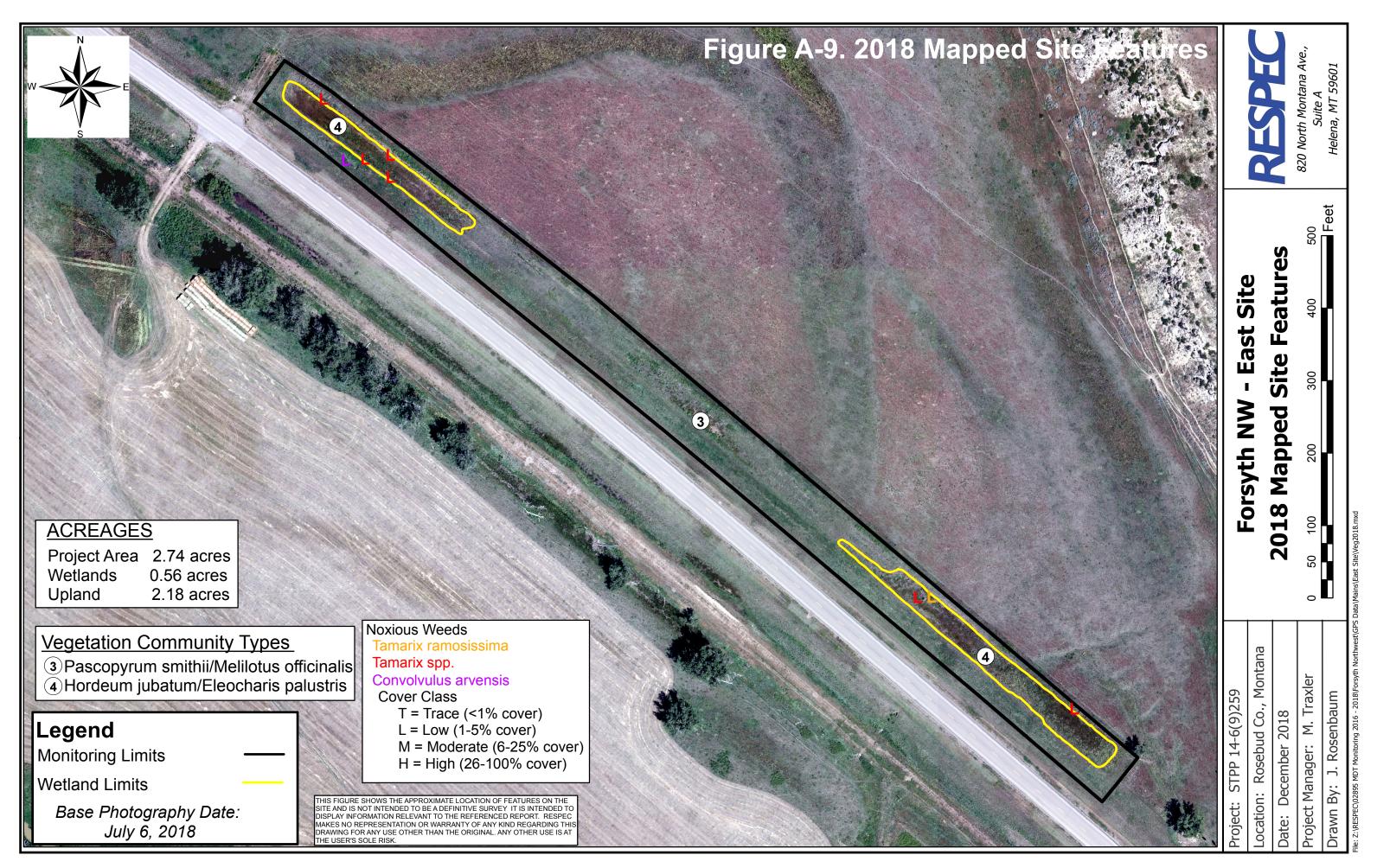


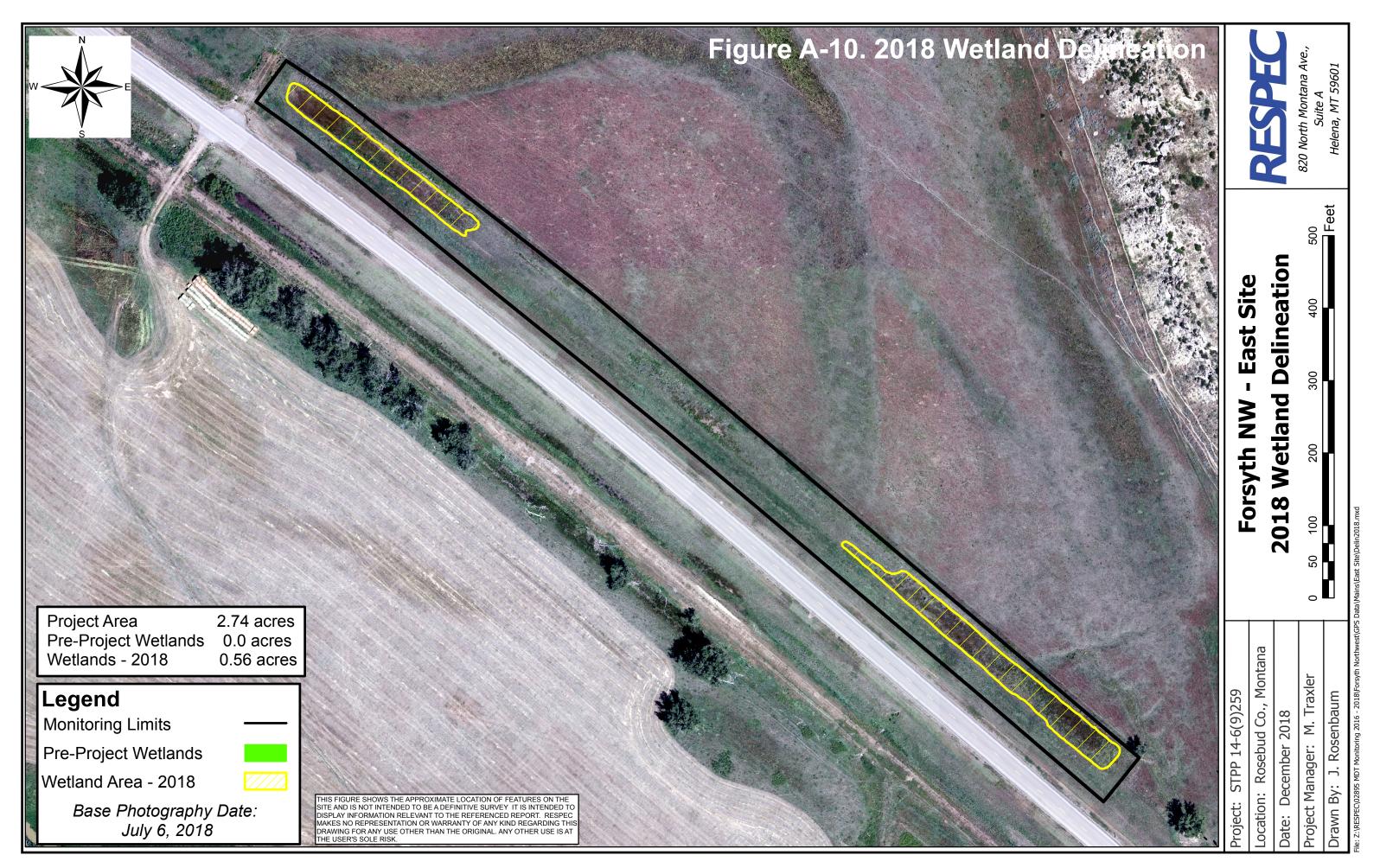












APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Forsyth – Northwest Rosebud County, Montana

RESPEC/MDT WETLAND MITIGATION SITE MONITORING FORM

Project Name: Forsyth NW - West Assessment Date: July 11, 2018 Location: ~15 miles NW of Forsyth Milepost: RP 280 on US 12 Legal Description: T 7N R 39E Weather Conditions: sunny, 75 degrees, breezy Initial Evaluation Date: August 15, 2013 Size of evaluation area: 13.71 acres Project Number: Person(s) conducting the assessment: M. Traxler MDT District: Glendive MDT District: Glendive Time of Day: 8:30 AM Monitoring Year: 6 # Visits in Year: 1 Land use surrounding wetland: Agriculture, grazing, US 12						
	Н	YDROLOG	GY			
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 2018. Groundwater Monitoring Wells: Absent						
Record depth of water below grown Well Number Depth W		Depth	Well Number	Depth]	
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 was flooded at the time of assessment due to 2018 being a very high 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): Symphocarpos albus / Pascopyrum smithii

Dominant Species	% Cover		% 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	3 = 11-20%	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%	Bare Ground	+=<1%
Puccinellia nuttalliana		Elymus repens	+=<1%
Bassia scoparia	+=<1%	Glycyrrhiza lepidota	+=<1%
Grindelia squarrosa		Helianthus annuus	+=<1%
Lactuca serriola	+=<1%	Pascopyrum smithii	+=<1%

Comments / Problems: Entire community under standing water in 2018. All vegetation dead. 2017 species left in table for reference purposes.

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		Lactuca serriola	+=<1%
Pascopyrum smithii	+=<1%	Populus deltoides	+=<1%
Schedonorus pratensis	+=<1%	Tragopogon dubius	+=<1%
Chenopodium album		Bromus tectorum	+=<1%
Elymus repens		Spartina pectinata	+=<1%
Grindelia squarrosa	+=<1%	Glycyrrhiza lepidota	+=<1%

Comments / Problems: <u>Entire community under standing water in 2018. 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: Entire community under standing water in 2018. All vegetation dead. 2017 species left in table for reference purposes.

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 2018. All vegetation dead. 2017 species left in table for reference purposes.</u>

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

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

Comments / Problems: Entire community under standing water in 2018. All vegetation dead. 2017 species left in table for reference purposes.

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	1 = 1-5%		
Bare Ground	3 = 11-20%		

Comments / Problems: New community in 2018

Community Number: 17 Community Title (main spp): Open Water

Dominant Species	% Cover	Dominant Species	% Cover
Open Water	5 = > 50%		
Typha latifolia	+=<1%		
Eleocharis palustris	+=<1%		
Schoenoplectus maritimus	+=<1%		

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

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 planted at site. Natural recruitment of cottonwoods and willows is occurring.

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW -	West Date: <u>July 11, 2018</u>	Examiner: Mark '	<u>l'raxler</u>	
Transect Number: 1	Approximate Transect Leng	th: 282 feet Con	mpass 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%
Euphorbia esula (sprayed, some remain partially alive)	1 = 1-5%
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	
Plant Species	Cover
Open Water	5 = > 50%
Dead Vegetation	+=<1%
Total Vegetative Cover:	0%

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

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

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW - West Date: July 11, 2018 Examiner: Mark 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%
Total Vegetative Cover:	95%

Transect Interval Length: 235 feet (station 7-242)	
Vegetation Community Type: 9: Eleocharis palustris / Op	en Water
Plant Species	Cover
Eleocharis palustris	2 = 6-10%
Schoenoplectus maritimus	2 = 6-10%
Open Water	5 = > 50%
Total Vegetative Cover:	5%

Transect Interval Length: 19 feet (station 242-261)			
Vegetation Community Type: 6: Pascopyrum smithii / Bromus	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	4 = 21-50%		
Lepidium perfoliatum	1 = 1-5%		
Pascopyrum smithii	5 = > 50%		
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 p	hotograph for each of the four cardinal directions surrounding the wetland.
	st one photograph showing upland use surrounding the wetland. If more than one upland
exist	s then take additional photographs.
	st one photograph showing the buffer surrounding the wetland.
One p	hotograph 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	
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	/	Problems:
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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>NA</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>NA</u> If yes, are the structures working properly and in good working order? <u>NA</u> If no, describe the problems below.

WILDLIFE

Mammal and Herptile Species Observed Tracks Scat Burrows Other Deer sp. Deer sp	erved T		ks	Sca	at	Bur	POX		041
ish sp.		\boxtimes				Dui	Burrows		Otn
dditional Activities Checklist: Macroinvertebrate Sampling (if required)						[
Macroinvertebrate Sampling (if required)									
Macroinvertebrate Sampling (if required)		\perp			<u> </u>				
Macroinvertebrate Sampling (if required)					<u> </u>	<u>L</u>	<u> </u>		
Macroinvertebrate Sampling (if required)]	[1		
Macroinvertebrate Sampling (if required)									
Macroinvertebrate Sampling (if required)									
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BIRD SURVEY - FIELD DATA SHEET

Site: Forsyth NW - West Date: 7/11/18 Survey Time: 8:30 am to 11:00 am

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
Eastern Kingbird	2	F FO	UP				
Western Meadowlark	1	FO L	UP				
Cliff Swallow	6	FO F	OW UP				
Canada Goose	5	F	OW				
Belted Kingfisher	3	L BP	UP OW				
Killdeer	2	FO	UP OW				
Mourning Dove	1	FO	UP OW				
American Coot	2	F	OW				
Brewer's Blackbird	2	FO	UP OW				

BEHAVIOR CODES

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

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

Weather: 75 degrees, sunny

Notes:

HABITAT CODES

SS = Scrub/ShrubAB = Aquatic bedFO = Forested**UP** = Upland buffer WM = Wet meadowI = IslandMA = Marsh**US** = Unconsolidated shore

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

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - West		c	City/County:	Rosebud		Samp	oling Date: 11-Ju	ıl-18
Applicant/Owner: MDT				State:	: MT Sa	ampling Point:	DP-1	1U
Investigator(s): Mark Traxler			Section, To	ownship, Ra		T_7N	R 39E	
Landform (hillslope, terrace, etc.):	Hillside		Local relief	f (concave, c	convex, none): con	vex	Slope: 1.0%	% <u>0.6</u> °
- Subregion (LRR): LRR G		 Lat.: 46.	33927		Long.: -106,876	743	Datum: W	
Soil Map Unit Name: Marvan silty cla			33327			classification:		10001
re climatic/hydrologic conditions on		time of year?	• Ye	es • No C		ain in Remarks		
Are Vegetation , Soil		significantly of			lormal Circumstanc			\circ
Are Vegetation , Soil ,		naturally pro			eded, explain any a	-		
Summary of Findings - At				_			-	res, etc.
Hydrophytic Vegetation Present?	Yes No •							-
Hydric Soil Present?	Yes ○ No •			e Sampled A		`		
Wetland Hydrology Present?	Yes ○ No •		withi	in a Wetland	_{1?} Yes O No 💿)		
Remarks:								
New data point in 2018.								
VEGETATION - Use scien	tific names of pl	ants	Dominant	FWS Re	gion: GP			
			Species?	Indicator	- 	worksheet:		
<u>Tree Stratum</u> (Plot size: 30 Foor	t Radius)	% Cover		Status	Number of Domina			
1					That are OBL, FAC		1	(A)
2		0			Total Number of Do	ominant		
3		0			Species Across All S		3	(B)
4					Dorsont of domir	t Charias		
Plot size:	15 Foot Radius	0	= Total C	over	Percent of domin That Are OBL, FA		33.3%	(A/B)
Sapling/Shrub Stratum (Plot size:	15 TOOL Naulus	20	100.0%		-			
1. Sarcobatus vermiculatus		0	100.0%) FAC	Prevalence Index			
2			0.0%		Total % Co		Multiply by:	_
4			0.0%		OBL species		x 1 =0	
5.			0.0%		FACW species		x 2 =	_
			= Total C	over	FAC species		x 3 = <u>75</u> x 4 = 200	_
Herb Stratum (Plot size: 5 Foot F	Radius)				FACU species		•	_
1 p		10	15.4%	FACU	UPL species	>		
2. Lactuca serriola		5	7.7%	FAC	Column Totals:	:85 ((A) <u>295</u>	_ (B)
3. Hordeum jubatum		10	15.4%	FACW	Prevalence I	index = B/A =	3.471	
4. Bromus arvensis			30.8%		Hydrophytic Vege	etation Indical	tors:	
5. Pascopyrum smithii 6.			30.8%	FACU	T - Panid Tee	for Undroph	ytic Vegetation	
7.		0_	0.0%					
8.			0.0%			ce Test is > 50 ce Index is ≤3		
9.			0.0%				ions ¹ (Provide su	
10.			0.0%		data in Rer	ngical Adaptati marks or on a	separate sheet)	pporting
			= Total C	over	Problematic	Hydrophytic V	egetation ¹ (Expl	ain)
Woody Vine Stratum (Plot size:	30 Foot Radius)				¹ Indicators of h	ydric soil and	wetland hydrolo	ogy must
1		0			be present.	<u> </u>		
2.								
-		0	= Total C	over	Hydrophytic			
% Bare Ground in Herb Stratum	5		_ 10tai 0	010.	Vegetation Present?	Yes O No	•	
	<u> </u>				Present:			
Remarks: Data point includes various upland	grasses and forhs							
Data point includes various upiand	grasses and rorps.							

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Soil Sampling Point: DP-1U

rofile Description: (Describe to the depth needed to docum Depth <u>Matrix</u>	Redox Features		_	•
(inches) Color (moist) % Color (moist)		Loc2	Texture	Remarks
0-4 10YR 3/2 100			Loam	roots
4-20 10YR 3/2 100			Clay Loam	salt crystals
			-	
			-	
Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Co		Grains ² Loca	ation: PL=Pore Lining.	
rdric Soil Indicators: (Applicable to all LRRs, unless other				roblematic Hydric Soils ³ :
Histosol (A1) Sandy Gley Histic Epipedon (A2) Sandy Red	red Matrix S4		= `	(9) (LRR I, J) e Redox (A16) (LRR F, G, H)
Black Histic (A3) Stripped M	` ,		Dark Surface	. ,
` ' = ''	cky Mineral (F1)		=	epressions (F16)
Stratified Layers (A5) (LRR F)	yed Matrix (F2)		(LRR H o	utside of MLRA 72 and 73)
1 cm Muck (A9) (LRR F,G,H) Depleted M	` '		Reduced Vert	ic (F18)
	k Surface (F6)		Red Parent M	laterial (TF2)
` '	Park Surface (F7) ressions (F8)		_ '	Dark Surface (TF12)
, , , , , , , , , , , , , , , , , , , ,	Depressions (F16)			n in Remarks)
	72 and 73 of LRR H)			ophytic vegetation and wetland present, unless disturbed or problen
strictive Layer (if present):				property amose alexanded or problem
Type:				
Type:				
Depth (inches):			Hydric Soil Preser	nt? Yes O No 💿
Depth (inches):			Hydric Soil Preser	nt? Yes O No •
Depth (inches):emarks:			Hydric Soil Preser	nt? Yes O No 🖲
Depth (inches):			Hydric Soil Preser	nt? Yes O No 💿
Depth (inches):emarks:			Hydric Soil Preser	nt? Yes O No 🖲
Depth (inches):emarks: hydric soil indicators observed.			Hydric Soil Preser	nt? Yes O No 💿
Depth (inches):emarks: hydric soil indicators observed.				
Depth (inches):emarks: hydric soil indicators observed. rdrology etland Hydrology Indicators:	apply)		_Secondary Ir	ndicators (minimum of two requi
Depth (inches):emarks: hydric soil indicators observed. rdrology etland Hydrology Indicators: imary Indicators (minimum of one required; check all that			Secondary Ir	ndicators (minimum of two requi Soil Cracks (B6)
Depth (inches):emarks: hydric soil indicators observed. rdrology etland Hydrology Indicators: imary Indicators (minimum of one required; check all that Surface Water (A1) Salt Crus	t (B11)		Secondary Ir Surface Sparsel	ndicators (minimum of two requi Soil Cracks (B6) y Vegetated Concave Surface (B8)
Depth (inches):emarks: hydric soil indicators observed. /drology etland Hydrology Indicators: imary Indicators (minimum of one required; check all that	t (B11) Invertebrates (B13)		Secondary Ir Surface Sparsel Drainag	ndicators (minimum of two requi Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10)
Depth (inches):emarks: hydric soil indicators observed. In	t (B11)		Secondary Ir Surface Sparsel Drainac Oxidize	ndicators (minimum of two requi Soil Cracks (B6) y Vegetated Concave Surface (B8) ne Patterns (B10) d Rhizospheres on Living Roots (C3)
Depth (inches):	t (B11) Invertebrates (B13) In Sulfide Odor (C1)	g Roots (C3)	Secondary Ir Surface Sparsel Drainac Oxidize	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) he Patterns (B10) d Rhizospheres on Living Roots (C3) here tilled)
Depth (inches):	t (B11) nvertebrates (B13) n Sulfide Odor (C1) on Water Table (C2)	g Roots (C3)	Secondary Ir Surface Sparsel Drainac Oxidize (w	ndicators (minimum of two requi Soil Cracks (B6) y Vegetated Concave Surface (B8) he Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled)
Depth (inches):	t (B11) Invertebrates (B13) In Sulfide Odor (C1) In Water Table (C2) Rhizospheres on Livin	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfish	ndicators (minimum of two requi Soil Cracks (B6) y Vegetated Concave Surface (B8) ne Patterns (B10) d Rhizospheres on Living Roots (C3) here tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9)
Depth (inches):emarks: hydric soil indicators observed. //drology etland Hydrology Indicators: imary Indicators (minimum of one required; check all that Surface Water (A1)	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4)	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ie Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2)
Depth (inches):	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4) ck Surface (C7)	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomon	ndicators (minimum of two requirements of two requirements (B6) by Vegetated Concave Surface (B8) be Patterns (B10) d Rhizospheres on Living Roots (C3) bere tilled) on Burrows (C8) ion Visible on Aerial Imagery (C9)
Depth (inches):	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4)	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomon	ndicators (minimum of two requires Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Depth (inches):emarks: hydric soil indicators observed. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that Surface Water (A1)	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4) ck Surface (C7)	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomon	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Depth (inches):	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4) ck Surface (C7)	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomon	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Depth (inches):emarks: hydric soil indicators observed. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that Surface Water (A1)	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4) ck Surface (C7) xplain in Remarks) (inches):	g Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomon	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Depth (inches):emarks: hydric soil indicators observed. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4) ick Surface (C7) explain in Remarks) (inches): (inches):	_	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomon	ndicators (minimum of two requires Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches):	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livinere not tilled) of Reduced Iron (C4) ck Surface (C7) xplain in Remarks) (inches):	_	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomon FAC-ne Frost H	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches):emarks: hydric soil indicators observed. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that Surface Water (A1)	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livin ere not tilled) of Reduced Iron (C4) ck Surface (C7) xplain in Remarks) (inches): (inches):	Wetl	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches):	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livin ere not tilled) of Reduced Iron (C4) ck Surface (C7) xplain in Remarks) (inches): (inches):	Wetl	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches):emarks: Inhydric soil indicators observed. Inhydric soil indicators observed. Inhydrology Indicators: rimary Indicators: rimary Indicators (minimum of one required; check all that surface Water (A1)	t (B11) invertebrates (B13) in Sulfide Odor (C1) on Water Table (C2) Rhizospheres on Livin ere not tilled) of Reduced Iron (C4) ck Surface (C7) xplain in Remarks) (inches): (inches):	Wetl	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	ndicators (minimum of two requir Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) there tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)

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WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - West			City/County:	Rosebud	Sampling Date: 11-Jul-18	
Applicant/Owner: MDT				State:	e: MT Sampling Point: DP-1W	
investigator(s): Mark Traxler			Section, To		lange: S 20 T 7N R 39E	
Landform (hillslope, terrace, etc.):	Floodplain		Local relief	(concave, c	convex, none): concave Slope: 0.0%	00°
ubregion (LRR): LRR G		Lat.: 46	33025		Long.: -106.876672 Datum: WGS84	
	0.2		.33923			
oil Map Unit Name: Marvan silty cla			. Va	s • No C	NWI classification: Not Mapped	
e climatic/hydrologic conditions on	_	-			(a, a. 	
Are Vegetation, Soil	, or Hydrology	significantly	disturbed?	Are "N	Normal Circumstances" present? Yes No	
Are Vegetation, Soil	, or Hydrology	naturally pro	blematic?	(If nee	eeded, explain any answers in Remarks.)	
Summary of Findings - At	tach site map sl	nowing sa	mpling p	oint loc	cations, transects, important features, o	etc.
Hydrophytic Vegetation Present?	Yes No		To the	. Commission A	A	
Hydric Soil Present?	Yes No			Sampled A		
Wetland Hydrology Present?	Yes No		withi	n a Wetland	_{id?} Yes ● No ○	
Remarks:						
Point on southwest side of open wa	ater. New data point in	2018.				
VECETATION Has seion	Lifia mannaa af mi		Dominant	EM/S Ro	egion: GP	
VEGETATION - Use scien	unc names or pr		_Species?			
Tree Stratum (Plot size: 30 Foot	t Radius)	Absolute % Cover	Rel.Strat. Cover	Indicator Status		
1					Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)	
2						
3		0			Total Number of Dominant Species Across All Strata: 1 (B)	
4		0				
/DI	15 Feet Dedice	0	= Total Co	over	Percent of dominant Species That Are OBL, FACW, or FAC:	В)
Sapling/Shrub Stratum (Plot size:	15 FOOT Radius				That Are ODL, TACW, OF TAC.	
1					Prevalence Index worksheet:	
2					Total % Cover of: Multiply by:	
3 4		_			OBL species 10 x 1 = 10	
5.					FACW species $\underline{60}$ x 2 = $\underline{120}$	
-		0	= Total Co	over	FACU species $0 \times 4 = 0$	
Herb Stratum (Plot size: 5 Foot F	Radius)					
1. Spartina pectinata		60	75.0%	FACW	012 Species	
2. Rumex crispus		10	12.5%	FAC		В)
3. Eleocharis palustris			12.5%	OBL	Prevalence Index = B/A =2	
4 5.		0	0.0%		Hydrophytic Vegetation Indicators:	
6.			0.0%		✓ 1 - Rapid Test for Hydrophytic Vegetation	
7.			0.0%		✓ 2 - Dominance Test is > 50%	
8.		0	0.0%		✓ 3 - Prevalence Index is ≤3.0 ¹	
9.		0	0.0%		4 - Morphological Adaptations (Provide supporti	ing
10.		0			data in Remarks or on a separate sheet)	
		80	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (Plot size:	30 Foot Radius				Indicators of hydric soil and wetland hydrology mu he present	ust
1					be present.	
2						
		0	= Total Co	over	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum	_20				Present? Yes • No ·	
Remarks:					+	
Remarks: Narrow wetland fringe around periods	meter of open water.					

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Soil Sampling Point: DP-1W

Profile Desc						firm the	absence of indicators.)
Depth (inches)	Matrix Color (moist)	<u>%</u>	Red Color (moist)	ox Featu <u>%</u>	res _Tvpe ¹	Loc2	Texture Remarks
(inches) 0-20	10YR 5/1	90	10YR 5/6	10	D	<u>гос-</u> М	Clay Loam
	10110 3/1		101K 3/0				City Louin
-							
	oncentration. D=Deple		· ·			ns ² Loca	ation: PL=Pore Lining. M=Matrix
1 —	Indicators: (Applic	able to all LRR		-			Indicators for Problematic Hydric Soils ³ :
Histosol	. ,		Sandy Gleyed				1 cm Muck (A9) (LRR I, J)
Black His	ipedon (A2)		Sandy Redox (Stripped Matrix	•			Coastal Prairie Redox (A16) (LRR F, G, H)
	n Sulfide (A4)		Loamy Mucky		1)		☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16)
	Layers (A5) (LRR F)		Loamy Gleyed				(LRR H outside of MLRA 72 and 73)
	ck (A9) (LRR F,G,H)		✓ Depleted Matri	•	,		Reduced Vertic (F18)
Depleted	Below Dark Surface (A11)	Redox Dark Su	. ,			Red Parent Material (TF2)
Thick Da	rk Surface (A12)		Depleted Dark	Surface (F	7)		Very Shallow Dark Surface (TF12)
Sandy Mu	uck Mineral (S1)		Redox depress	. ,			Other (Explain in Remarks)
	lucky Peat or Peat (S2	, , ,	High Plains De	•	• •		³ Indicators of hydrophytic vegetation and wetland
5 cm Mud	cky Peat or Peat (S3)	(LRR F)	(MLRA 72	and 73 of	f LRR H)		hydrology must be present, unless disturbed or problematic.
Restrictive L	ayer (if present):						
Type:							
Depth (inc	ches):						Hydric Soil Present? Yes No
Remarks:							
Soil meets cr	riteria for depleted i	matrix.					
<u></u>							
Hydrolog	l y						
Wetland Hyd	drology Indicators:						Secondary Indicators (minimum of two required)
Primary Ind	icators (minimum o	of one required	; check all that app	oly)			Surface Soil Cracks (B6)
Surface \	Water (A1)		✓ Salt Crust (B	11)			Sparsely Vegetated Concave Surface (B8)
✓ High Wa	iter Table (A2)		Aquatic Inve	rtebrates ((B13)		Drainage Patterns (B10)
✓ Saturatio	on (A3)		Hydrogen Su	ılfide Odor	(C1)		Oxidized Rhizospheres on Living Roots (C3)
Water M	arks (B1)		Dry Season \	Nater Tab	le (C2)		(where tilled)
Sedimen	t Deposits (B2)		Oxidized Rhi	zospheres	on Living Ro	oots (C3)	Crayfish Burrows (C8)
Drift dep	oosits (B3)		(where	not tilled)			Saturation Visible on Aerial Imagery (C9)
Algal Ma	t or Crust (B4)		Presence of	Reduced I	ron (C4)		Geomorphic Position (D2)
Iron Dep	oosits (B5)		☐ Thin Muck S	urface (C7)		FAC-neutral Test (D5)
Inundati	on Visible on Aerial In	nagery (B7)	Other (Expla	in in Rema	arks)		Frost Heave Hummocks (D7) (LRR F)
Water-St	tained Leaves (B9)						
Field Observ	vations:						
Surface Water	r Present? Ye	s O No 💿	Depth (inc	nes):			
Water Table F	Present? Ye	s • No O	Depth (inc	nes):	14		
Saturation Pre	esent?	s • No O				Wetla	and Hydrology Present? Yes $lacktriangle$ No $lacktriangle$
(includes capi	ilary iringe)		Depth (inc		0		
Describe Re	corded Data (stream	m gauge, moni	tor well, aerial pho	tos, prev	ious inspec	tions), if	available:
Remarks:							
Soil saturate	ed to the surface an	d standing wat	er in pit at 14".				

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MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	Project Name: Forsyth NW -	West 2. MDT Project #: STP	P 14-6(9)259 3. Control #: 4	<u>1059</u>							
3.	Evaluation Date: 7/11/18 4. Evaluator(s): Mark Traxler 5. Wetland/Site #(s): Forsyth NW - West										
6.	Wetland Location(s): Township <u>7 N</u> , Range <u>39 E</u> , Section <u>20;</u> Township <u>7 N</u> , Range <u>39 E</u> , Section <u>29</u>										
	Approximate Stationing or I	Roadposts: RP 280 on US 12									
	Watershed: 14 - Middle Yell	owstone County: Rosebud									
7.	Evaluating Agency: RESPEC Purpose of Evaluation: Wetland potentially affection Mitigation wetlands; pro	ected by MDT project	8. Wetland Size (acre)	(visually estimated) 10.55 (measured, e.g. GPS)							
	✓ Mitigation wetlands; po✓ Other	st-construction		AA) Size (acre): <u>>10.55</u> (visua rmining AA) (measu							
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						
	Pivarina	Emergent Wetland		Permanent / Perennial	5						

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.

	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.): 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.

- ii. Prominent noxious, aquatic nuisance, and other exotic vegetation species: Euphorbia esula, Convolvulus arvensis, Cirsium arvense, Tamarix ramosissima
- 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.

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

14A. HABITAT FOR FEDERAL	LY LIS	STED (OR P	ROPO	OSED T	THRE	ATEN	ED (OR EI	NDANG	ERED	PLA	NTS C	R AN	IMALS	3				
i. AA is Documented (D) or So Primary or critical habitat (list Secondary habitat (list special Incidental habitat (list special No usable habitat	specio	es)	to co		S S S	ck bo 	x base	d on	defin	itions ir	n manu	al.								
	Rating: Based on the strongest habitat chosen in 14A(i) above, select the corresponding functional point and rating.																			
Highest Habitat Level	Doc/P	rimary	S	us/Pr	imary	Do	c/Sec	onda	ary	Sus/Se	conda	ry	Doc/li	ncider	ntal	Sus	Incide	ntal	None	е
Functional Point/Rating												0L								
Sources for documented use	(e.g. ol	bservat	ions,	recor	'ds):															
	B. 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			_			_						_								=
Highest Habitat Level	Doc/P	rimary	S	us/Pr	imary	Do	c/Sec	onda	ary	Sus/Se	conda	ry	Doc/I	ncider	ntal	Sus/	Incide	ntal	None	
S1 Species Functional Point/Rating	-				-														.0L	
S2 and S3 Species .9H																				
Sources for documented use (e.g. observations, records): <u>Ammannia observed within AA in previous year.</u>																				
14C. GENERAL WILDLIFE HA	BITAT	RATII	NG																	
i. Evidence of Overall Wildlife	Use i	n the A	A : C	Check	substa	ntial,	mode	rate,	or lov	w based	l on su	pport	ing ev	dence	١.					
□ Substantial: Based on any of □ observations of abundant □ abundant wildlife sign suc □ presence of extremely lim □ interview with local biolog □ Moderate: Based on any of □ observations of scattered □ common occurrence of w □ adequate adjacent upland □ interview with local biolog	wildlife ch as se iting ha jist with the follo wildlife ildlife s d food s	e #s or cat, tra abitat for knowl owing [e group ign succession]	high cks, reature edge check s or in th as	specionest sides not the of the k]. Individual scat,	tructure t availal e AA luals or tracks,	es, ga ble in	ime tra	ails, e urrou ew sp	etc. Inding	od) g area s during	□ f □ li □ s □ i	ew or ttle to parse ntervi	no wi no wi adjad ew wit	Idlife o Idlife s ent up	bserva ign bland fo	ations ood s	llowing during ources ith kno	peak	use pe	
ii. Wildlife Habitat Features: V For class cover to be considered																				
percent composition of the AA (S/I = seasonal/intermittent; T/E																nial;				
Structural Diversity (see #13)		-		□н									derate						ow	
Class Cover Distribution (all vegetated classes)		□ Ev	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										+				M						
at AA (see #12i) ☐ High Disturbance at				_																
AA (see #12i)																				
iii. Rating: Use the conclusion	s from	i and ii	abov	e and								oint a	and rat	ing.		_				
Evidence of Wildlife Use	-	Exce	ntia-	nal	Wil		Habit High	at Fe	eatur	es Rati ⊠ м∠	ng (ii) oderate	•		⊠ Lo	14 /					
(i) ☐ Substantial		EXC		ıaı								-		<u> </u>	vV	-				
⊠ Moderate					+				+		5M									
✓ Moderate .5M ✓ Minimal																				

Comments: Several bird species observed including family group of belted kingfisher.

Wetland/Site #(s): Forsyth NW - West 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 Ji.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** □ Permanent / Perennial Seasonal / Intermittent ☐ Temporary / Ephemeral Water in AA Aquatic Hiding / Resting / **Escape Cover** Optimal Poor Optimal Poor Optimal Poor Adequate Adequate Adequate **Thermal Cover:** 0 O S 0 S O S O S 0 S 0 S 0 S S 0 S optimal / suboptimal FWP Tier I fish species FWP Tier II or Native Game 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.
- 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 No

.3L

- 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 No
- iii. Final Score and Rating: 31 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.

70 / 35 = 2.0

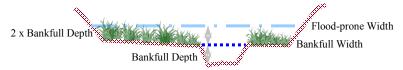
FWP Tier III or Introduced

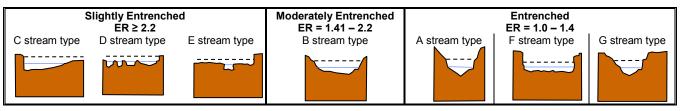
FWP Non-Game Tier IV or

Game fish

No fish species

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	☐ Slightly Entrenched			erately Entr	enched	☐ Entrenched			
(Rosgen 1994, 1996)	C, D	C, D, E stream types			stream typ	е	A, F, G stream types			
Percent of Flooded Wetland Classified as										
Forested and/or Scrub/Shrub	75%	75% 25-75% <25%			75% 25-75% <25%			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 upgraded on SE end of wetland in 2017.

				Wetla	nd/Site #(s	s): <u>Forsytl</u>	h NW - Y	West				
14	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 follows: P/P = permanent/perennial; S/I = s											
	Estimated Maximum Acre Feet of Warren in Wetlands within the AA that are Seriodic Flooding or Ponding		3 >5 acre	feet	□ 1.1	to 5 ac	re feet		☐ ≤1 acre foot			
	Duration of Surface Water at Wetlands	within the A	A □ 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		.9H								
	Wetlands in AA flood or pond < 5 out of 10 years											
C	omments: A large area of the AA is seasor	ally flooded b	y East Spri	ng Coulee	<u>.</u>							•
	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. 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 potenti nutrients, o such that o substantial sedimentat toxicants, o present.	al to delive or compour ther functi ly impaired ion, source	er sedime nds at leve ons are n d. Minor es of nutr	nts, els ot ients or	need of causes toxican has po- nutrien functio sedime	f TMDL " relate Its or A tential t ts, or c ns are	on MDEQ developned to sedie A receiver to deliver compound substanti , sources trophicati	nent for ment, nu s or suri high levils such t ally impa of nutrie	"probat strients, roundin els of so hat othe aired. M ents or	ole or g land us ediments er ajor	S,
	% Cover of Wetland Vegetation in AA	≥7	0%	⊠ <	70%		□ ≥ 7	0%		□<	70%	
	Evidence of Flooding / Ponding in AA	☐ Yes	□No	⊠ Yes	□No	□ Y	es	☐ No		Yes	□ No	5
	AA contains no or restricted outlet			.7M								
	AA contains unrestricted outlet											
С	Comments: Open/standing water was present across entire site in 2018 with wetland vegetation cover estimated at 40 percent site wide.											
14	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	□ Barrasara	Duration (-		•			1	

% 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 / Epheme									
□ ≥ 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	Genera	l Wildlife Habitat Rati	ing (14Ciii)
(14Diii)	☐ E/H	⊠ M	L
☐ 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	\boxtimes	Vegeta	ted Co	mponent	t >5 ac	res		Vegeta	ated Co	mponent	1-5 ac	res		Veget	tated Co	mponen	t <1 acı	re
В		ligh	⊠ M	oderate		Low	<u> </u>	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																		

		vveliand	/ Sile #(5): <u>Forsyth NW</u>	- vvest			
14I. PRODUCTION EXPORT / FOOD CHAIN	SUPPORT (conti	nued)						
iii. Modified Rating: Note: Modified score ca	nnot exceed 1.0 o	or be less than	0.1.					
Vegetated Upland Buffer: Area with ≥ 30 mowing or clearing (unless for weed controls there an average ≥ 50-foot wide vegetate	ol).					•	•	
iv. Final Score and Rating: 8H Comments	s: <u>Upland buffer b</u>	etween norther	n bound	ary of AA and	highway great	ter than 5	Oft.	
14J. GROUNDWATER DISCHARGE / RECH Check the appropriate indicators in i and								
i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known or observed. Wegland occurs at the toe of a natural slope. Seeps are present at the wetland edge. AA permanently flooded during drought periods. Wetland contains an outlet, but no inlet. Shallow water table and the site is saturated to the surface. Other:				meable substr tland contains eam is a knowr	ate present wi inlet but no oເ	ıtlet.		
iii. Rating: Use the information from i and ii a								a
		Saturation at <i>I</i> /ATER THAT I						
Criteria	□ P/P	<u>MIER INALI</u> ⊠ S		AKGING THE □T	GROUNDWA			
☐ Groundwater Discharge or Recharge		.7M						1
☐ Insufficient Data/Information		•]
Comments: Site hydrology is combination of s	seasonally high gro	oundwater table	e and rur	noff.				
14K. UNIQUENESS								
i. Rating: Working from top to bottom, use the	e matrix below to	select the funct	ional poi	nt and rating.				
Replacement Potential for ass	e matrix below to so a contains fen, bo rings or mature (i rested wetland Ol sociation listed a e MTNHP	og, warm >80 yr-old) R plant	AA do cited r divers contai	nt and rating. es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the	Structural gh OR ciation	previou associ	es not contai usly cited rar ations AND s ty (#13) is lo	e types OR structural
Replacement Potential for ass the Estimated Relative Abundance (#11)	contains fen, borings or mature (rested wetland Ol sociation listed a	og, warm >80 yr-old) R plant is "S1" by	AA do cited r divers contai listed	es not contain are types ANI ity (#13) is hig ns plant asso	Structural gh OR ciation e MTNHP	previou associa diversi	usly cited rar ations AND s	e types OR structural w-moderate
Replacement Potential for asset the Estimated Relative Abundance (#11)	Contains fen, borings or mature (in ested wetland Olesociation listed as MTNHP Rare	og, warm >80 yr-old) R plant s "S1" by	AA docited r divers contai listed	es not contain are types ANI ity (#13) is hig plant asso as "S2" by the Common	O structural gh OR ciation e MTNHP	previou associa diversi	usly cited rar ations AND s ty (#13) is lo	e types OR structural w-moderate □ Abundant
Replacement Potential for asset the Estimated Relative Abundance (#11)	a contains fen, borings or mature (interested wetland Olesociation listed and MTNHP Rare	og, warm >80 yr-old) R plant is "S1" by	AA docited r divers contai listed	es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the Common 5M	O structural gh OR ciation e MTNHP Abundant	previou associa diversi	usly cited rar ations AND s ty (#13) is lo	e types OR structural w-moderate Abundant
Replacement Potential for assistance (#11)	a contains fen, borings or mature (in setted wetland Olesociation listed as MTNHP Rare	og, warm >80 yr-old) R plant s "S1" by	AA docited r divers contai listed	es not contain are types ANI ity (#13) is hig plant asso as "S2" by the Common	O structural gh OR ciation e MTNHP	previou associa diversi	usly cited rar ations AND s ty (#13) is lo	e types OR structural w-moderate □ Abundant
Replacement Potential for assisting the Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: AA with several mature trees and Affords 'bonus' points if AA provides a re i. Is the AA a known or potential recreation ii. Check categories that apply to the AA:	A contains fen, borings or mature (ings or mature (ings or mature (ings or mature)) Sected wetland Olisociation listed and MTNHP Rare	og, warm >80 yr-old) R plant s "S1" by Abundant natural state. NA (proceed to ational opportul site? X YES	AA docited r divers contai listed : Rare O Overall inity.	es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the Common 55M Summary and	O structural gh OR ciation e MTNHP Abundant I Rating page)	previous associativersi Rare	usly cited rar ations AND s ty (#13) is lor Common	e types OR structural w-moderate Abundant
Replacement Potential for asset the Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: AA with several mature trees and 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a re i. Is the AA a known or potential recreation ii. Check categories that apply to the AA:	A contains fen, borings or mature (interested wetland Olescotation listed and MTNHP Rare	og, warm >80 yr-old) R plant is "S1" by Abundant natural state. NA (proceed to ational opportul site? YES ientific Study	AA docited r divers contai listed : Rare O Overall inity.	es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the Common 55M Summary and	O structural gh OR ciation e MTNHP Abundant I Rating page)	previous associativersi Rare	usly cited rar ations AND s ty (#13) is lor Common	e types OR structural w-moderate Abundant
Replacement Potential for asset the Estimated Relative Abundance (#11)	A contains fen, borings or mature (interested wetland Olescotation listed and MTNHP Rare	og, warm >80 yr-old) R plant is "S1" by Abundant natural state. NA (proceed to ational opportul site? YES ientific Study	AA docited r divers contai listed a listed a contai listed a c	es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the Common 55M Summary and	O structural gh OR ciation e MTNHP Abundant I Rating page)	previous associativersi Pare	usly cited rar ations AND s ty (#13) is lor Common	e types OR structural w-moderate
Replacement Potential for asset the Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: AA with several mature trees and 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a re i. Is the AA a known or potential recreation ii. Check categories that apply to the AA: [iii. Rating: Use the matrix below to select the Rnown or Poter Public ownership or public easement with the categories as the select the Public ownership or public easement with the categories as the select the public ownership or public easement with the categories as the select the public ownership or public easement with the categories as the select the public easement with the categories as the select the public easement with the categories as the	A contains fen, borings or mature (contains fen) be rings or mature (contains fen) be rested wetland of sociation listed at the MTNHP Rare	og, warm >80 yr-old) R plant is "S1" by Abundant natural state. NA (proceed to ational opportul site? YES ientific Study I or Education is access (no points)	AA docited r divers contai listed a listed a contai listed a c	es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the	O structural gh OR ciation e MTNHP Abundant I Rating page)	previous associativersi Rare	usly cited rar ations AND s ty (#13) is lor Common	e types OR structural w-moderate
Replacement Potential for asset the Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: AA with several mature trees and 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a re i. Is the AA a known or potential recreation ii. Check categories that apply to the AA: [iii. Rating: Use the matrix below to select the Known or Poten	A contains fen, borings or mature (ings or mat	og, warm >80 yr-old) R plant s "S1" by Abundant natural state. NA (proceed to ational opportul site? X YES ientific Study I or Education access (no posion required)	AA docited r divers contai listed : Rare	es not contain are types ANI ity (#13) is high i	D structural gh OR ciation e MTNHP Abundant I Rating page) eck the NA box eational	previous associativersi diversi Rare	usly cited rar ations AND s ty (#13) is lor Common	e types OR structural w-moderate

Comments: Property owned by MDT. 15. GENERAL SITE NOTES: ____

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

Function & Value Variables	Rating – Actual Functional Points	Possible Functional Points	Functional Units: Actual Points x Estimated AA Acreage	Indicate the Four Most Prominent Functions with an Asterisk	
A. Listed / Proposed T&E Species Habitat	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	68.09 Total	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 <u>wetland</u> component < 1 acre (do <u>not</u> include upland vegetated buffer); and
	Percent of possible score < 35% (round to nearest whole #).
ı	<u></u>
	OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.
_	THE ANAL 1010 AND

RESPEC / MDT WETLAND MITIGATION SITE MONITORING FORM

Project Name: For Assessment Date: Location: ~8 miles Milepost: ~ Legal Description: Weather Condition Initial Evaluation I Size of evaluation	July 11, 20 NW of Fo 262 on US T <u>7N</u> as: 85 degree Date: <u>Augu</u>	018 0rsyth 5 12 R 39E Sees, sunny 1st 15, 2013	Project Number: Person(s) conducting the assessment: M. Traxler MDT District: Glendive Section 33 Time of Day: 2:00 PM-3:00 PM Monitoring Year: 6 # Visits in Year: 1 Land use surrounding wetland: Ag, grazing, US Hwy 12				
		Н	YDROLOG	GY			
Surface Water Source: Precipitation , runoff, shallow groundwater Inundation: Absent Average Depth: Q feet Range of Depths: Q Percent of assessment area under inundation: Q 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 w	Depth	ground surface (1 Well Number	n feet): Depth	Well Number	Depth]	
vven rvamber	Бери	vv cii i (uiiibci	Бери	vv cii i vuiibei	Бери		
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: Soil not saturated during mid-July survey but soil cracking noticed in areas saturated earlier in growing season.							

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

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

Dominant Species	% Cover	Dominant Species	% Cover

Comments / F	oblems:
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PLANTED WOODY VEGETATION SURVIVAL

Plant Species	Number Originally Planted	Number Observed	Mortality Causes
-			

Comments / Problems: No planted woody vegetation. Young volunteer cottonwoods doing well around edge of wetland.

MDT WETLAND MONITORING – VEGETATION TRANSECT

Site: Forsyth NW - Middle Date: July 11, 2018 Examiner: Mark Traxler

Transect Number: <u>1</u> Approximate Transect Length: <u>50 feet</u> Compass Direction from Start: <u>205°</u> 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	2 = 6-10%
Muhlenbergia asperifolia	1 = 1-5%
Bromus tectorum	4 = 21-50%
Chenopodium album	3 = 11-20%
Elymus canadensis	2 = 6-10%
	_
Total Vegetative Cover:	60%

Transect Interval Length: 19 feet (station 14-33)	
Vegetation Community Type: 4 - Puccinellia nuttalliana	/ Hordeum
jubatum	
Plant Species	Cover
Bare Ground	2 = 6-10%
Hordeum jubatum	2 = 6-10%
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 = 1-5%
Elymus canadensis	+=<1%
Melilotus officinalis	2 = 6-10%
Schedonorus pratensis	2 = 6-10%
Elymus trachycaulus	4 = 21-50%
Pascopyrum smithii	1 = 1-5%
Symphoricarpos albus	1 = 1-5%
Populus deltoides	4 = 21-50%
Poa pratensis	+=<1%
Total Vegetative Cover:	95%

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 peri	meter developing w	etland vegetation (excluding dam/be	erm 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.

At least one photograph showing upland use surrounding the wetland. If more than one upland

One photograph for each of the four cardinal directions surrounding the wetland.

exists then take additional photographs.

Photograph Checklist:

Comments / Problems:

		oh showing the buffer surrounding the wetland. each end of the vegetation transect, showing the transec	t.
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
Γ-1 start		Transect 1 start: 46.322948 / -106.842323	205
Γ-1 end		Transect 1 end: 46.322754 / -106.842438	25
OP-1W		Wetland soil pit: 46.322942 / -106.842481	
OP-1U		Upland soil pit: 46.322911 / -106.842492	
		W & E along road buffer	
		-	

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>NA</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>NA</u> If yes, are the structures working properly and in good working order? <u>NA</u> If no, describe the problems below.

WII	DI	TEE
77 11	1171.	лгс

Mammal and Herptile Species	Number Observed	Tr	acks		nd		ect Ir Bui			of Use	e Other
	Obscived	11	acks			<u> </u>	Dui				tilei
									_		
		<u>sign</u>	<u>of wi</u>	ldli	<u>ife</u>	no	ted o	<u>luri</u>	ng th	e 2018	field
A Macroinvertebrate Sampling (sign_	<u>of wi</u>	<u>ldl</u> i	<u>ife</u>	<u>no</u>	ted o	<u>duri</u>	ng th	e 2018	<u>field</u>
		<u>sign</u>	<u>of wi</u>	<u>ldl</u> i	<u>ife</u>	<u>no</u>	ted o	<u>duri</u>	ng th	e 2018	s field
		<u>sign</u>	of wi	<u>ldl</u> i	<u>ife</u>	<u>no</u>	ted o	<u>duri</u>	ng th	e 2018	S field
		<u>sign</u>	of wi	<u>ldl</u> i	<u>ife</u>	<u>no</u>	ted o	<u>luri</u>	ng th	e 2018	S field
		<u>sign</u>	of wi	<u>ldli</u>	<u>ife</u>	<u>no</u>	ted o	<u>luri</u>	ng th	e 2018	s field
		<u>sign</u>	<u>of wi</u>	<u>ldl</u> i	<u>ife</u>	<u>no</u>	ted o	<u>luri</u>	ng th	e 2018	s fie

BIRD SURVEY - FIELD DATA SHEET

Site: Forsyth NW - Middle Date: 7/11/18 Survey Time: 2:30 pm to 3:00 pm

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
Eastern Kingbird	1	FO	UP				
-							

BEHAVIOR CODES

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

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

Weather: 85 degrees, sunny

M	otes:	
11	otes:	

HABITAT CODES

SS = Scrub/ShrubAB = Aquatic bedFO = Forested**UP** = Upland buffer WM = Wet meadowI = IslandMA = Marsh**US** = Unconsolidated shore

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

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - Middle			City/County:	Rosebud		Samp	oling Date: $_{oldsymbol{1}}$.1-Jul-18	
Applicant/Owner: MDT				State:	: MT .	Sampling Point:	D	P-1U	
Investigator(s): Mark Traxler			Section, To			T 7N	R 39E		
Landform (hillslope, terrace, etc.):	: Shoulder slope		Local relief	(concave, c	convex, none): CO	onvex	Slope:	5.0%	2.9 °
Subregion (LRR): LRR G	· ·	 Lat.: 46	.322943		Long.: -106.84	 12479		n: WGS8	
Soil Map Unit Name: Harlem silty cla	2ν 0 to 2 nercent slones				-	I classification:		-	
re climatic/hydrologic conditions or				s • No C		olain in Remarks			
Are Vegetation , Soil		significantly			lormal Circumstar		Yes •	No O	
						-		110	
, , , , , , , , , , , , , , , , , , ,		naturally pro		-	eded, explain any		-		_
Summary of Findings - A		owing sa	mpling p	oint loc	ations, trans	sects, impo	rtant fea	tures,	, etc.
Hydrophytic Vegetation Present?	Yes O No O		Is the	Sampled A	lrea				
Hydric Soil Present?	Yes No O			-	_{i?} Yes O No (•			
Wetland Hydrology Present?	Yes O No O			16 11000					
Remarks:	- 12.5 Ibo oducal co o	·	م مدود داد						
DP on slope above depression who	ere no positive hydrolgy i	indicators are	evident to a	late.					
VEGETATION - Use scien	ntific names of pla	ants	Dominant	FWS Re	gion: GP				
		Absolute	Species? Rel.Strat.	Indicator	Dominance Tes	t worksheet:			
Tree Stratum (Plot size: 30 Foo	ot Radius)	% Cover	Cover	Status	Number of Domir	nant Species			
1			<u> </u>		That are OBL, FA		0	(A	A)
2			Ц		Total Number of	Dominant			
3		0	<u> </u>		Species Across Al		2	(E	B)
4					Percent of dom	ninant Species			
Sapling/Shrub Stratum (Plot size:	· 15 Foot Radius)	0	= Total Co	ver	That Are OBL, I		0.0%	6 (A	A/B)
1. Populus deltoides	, 1510001100.00	1	100.0%	EAC	-	-			
			0.0%	FAC	Prevalence Inde		• 100 L. I. I.		
3			0.0%		Total % C		//ultiply by: < 1 =		
4			0.0%			-		0	
5.		0	0.0%		FACW species FAC species		<pre></pre>	_	
		1	= Total Co	ver	FACU species			388 888	
Herb Stratum (Plot size: 5 Foot	Radius)				UPL species			5	
1. Elymus trachycaulus		70	✓ 71.4%	FACU	· ·	-	`		(-)
			20.4%	FACU	Column Total:		(A) <u>3</u>	<u> </u>	(B)
			5.1%	FACU	Prevalence	e Index = B/A =	4_		
4. Ratibida columnifera		1	1.0%	UPL	Hydrophytic Ve	getation Indicat	ors:		
5. Helianthus annuus 6.			0.0%	FACU	1 - Rapid T	est for Hydroph	vtic Vegetati	ion	
7.			0.0%	-		ance Test is > 50		U	
8.			0.0%			nce Index is ≤3			
9.			0.0%			ological Adaptati		≏ cunnor	rtina
10.		0	0.0%		data in R	emarks or on a	separate she	et)	ung
		98	= Total Co	ver	Problemati	ic Hydrophytic V	egetation ¹ (F	Explain)	
Woody Vine Stratum (Plot size:	30 Foot Radius)					f hydric soil and	wetland hyd	irology n	nust
1		0			be present.				
2.									
		0	= Total Co	ver	Hydrophytic				
% Bare Ground in Herb Stratum	5				Vegetation Present?	Yes O No	•		
Remarks:									
Well-vegetated upland buffer.									

US Army Corps of Engineers

Soil Sampling Point: DP-1U

Profile Description: (Describe to the depth needed to document the Depth Matrix Redox	Features			
(inches) Color (moist) % Color (moist)	- 1	Loc ²	Texture	Remarks
0-2 2.5Y 3/2 100			Clay Loam	
2-20 2.5Y 3/3 100			Clay Loam	
1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered of		² Locatio	on: PL=Pore Lining. M=M	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise n			Indicators for Proble	•
☐ Histosol (A1) ☐ Sandy Gleyed Mat ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5)			1 cm Muck (A9) (L	RR I, J) lox (A16) (LRR F, G, H)
Black Histic (A3) Stripped Matrix (S	•		Dark Surface (S7)	. , , , , ,
Hydrogen Sulfide (A4) Loamy Mucky Min	,		High Plains Depres	` ,
Stratified Layers (A5) (LRR F) Loamy Gleyed Ma	itrix (F2)		(LRR H outside	e of MLRA 72 and 73)
1 cm Muck (A9) (LRR F,G,H) Depleted Matrix (I	•		Reduced Vertic (F	18)
Depleted Below Dark Surface (A11)	` '		Red Parent Materia	al (TF2)
Thick Dark Surface (A12) Depleted Dark Surface (S1) Redox depression:	` '		Very Shallow Dark	, ,
☐ Sandy Muck Mineral (S1) ☐ Redox depression: ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ High Plains Depre	` '		Other (Explain in F	,
	d 73 of LRR H)			tic vegetation and wetland ent, unless disturbed or problem
estrictive Layer (if present):			Trydrology mast be pres	chi, unicss disturbed of problem
Strictive Layer (ii present):				
Tyne				
Type:			Hydric Soil Present?	Yes ○ No •
Depth (inches):			Hydric Soil Present?	Yes ○ No ●
Depth (inches):			Hydric Soil Present?	Yes ○ No •
Depth (inches):			Hydric Soil Present?	Yes ○ No •
Depth (inches):		_]	Hydric Soil Present?	Yes ○ No •
Depth (inches): Demarks: Demark		_	Hydric Soil Present?	Yes ○ No •
Depth (inches):emarks: b hydric soil indicators observed. ydrology			,	
Depth (inches):emarks: Depth (inches):emarks: Depth (inches):emarks: Depth (inches):emarks: Depth (inches):emarks: Depth (inches):emarks: Depth (inches):emarks:emarks: Depth (inches):emarks:)		,	tors (minimum of two requir
Depth (inches):emarks: hydric soil indicators observed. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply)			Secondary Indica	tors (minimum of two requir Cracks (B6)
Depth (inches):emarks: hydric soil indicators observed. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply))		Secondary Indica Surface Soil Sparsely Veg	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8)
Depth (inches):emarks: p hydric soil indicators observed. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1)) brates (B13)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10)
Depth (inches):emarks: hydric soil indicators observed. ydrology tetland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1)) brates (B13) de Odor (C1)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3)
Depth (inches):) brates (B13) de Odor (C1)	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled)
Depth (inches):) brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled) ows (C8)
Depth (inches):) brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled)	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) sible on Aerial Imagery (C9)
Depth (inches):	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4)	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) eterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) sible on Aerial Imagery (C9) Position (D2)
pepth (inches):	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4) ace (C7)	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) eterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) sible on Aerial Imagery (C9) Position (D2)
Depth (inches): Demarks: Dema	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4) ace (C7)	es (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5)
Depth (inches):	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4) ace (C7)	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5)
Depth (inches):	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root tilled) duced Iron (C4) ace (C7) in Remarks)	rs (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5)
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Depth (inches):	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root tilled) duced Iron (C4) ace (C7) in Remarks)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) tterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5)
Depth (inches):	brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root tilled) duced Iron (C4) ace (C7) in Remarks)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) eterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches): Demarks: Dema	brates (B13) brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4) ace (C7) in Remarks) s): s): s):	Wetlan	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) eterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches): Remarks: O hydric soil indicators observed. Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Furface Water Present? Ves No Depth (inches) Furface Water Present? Ves No Depth (inches) Furface Water Present? Ves No Depth (inches) Furface Recorded Data (stream gauge, monitor well, aerial photos) Describe Recorded Data (stream gauge, monitor well, aerial photos)	brates (B13) brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4) ace (C7) in Remarks) s): s): s):	Wetlan	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) eterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches):	brates (B13) brates (B13) de Odor (C1) ter Table (C2) spheres on Living Root t tilled) duced Iron (C4) ace (C7) in Remarks) s): s): s):	Wetlan	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation Vi Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) etated Concave Surface (B8) eterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)

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WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - Middle				City/County:	Rosebud	Sampling Date: 11-Jul-18
pplicant/Owner: MDT					State	: MT Sampling Point: DP-1W
nvestigator(s): Mark Traxler				Section, To		nnge: S 33
Landform (hillslope, terrace, etc.): S						convex, none): concave Slope: 0.0% 0.0
ubregion (LRR): LRR G	, ruic			.322913	(01070
-						
oil Map Unit Name: Harlem silty clay					(a) (NWI classification: Not Mapped
e climatic/hydrologic conditions on	the site typical	I for this	time of year	? Ye	s 💿 No 🤇	
Are Vegetation, Soil	, or Hydrolo	gy s	significantly	disturbed?	Are "N	lormal Circumstances" present? Yes No
Are Vegetation, Soil	, or Hydrolo	gy 🗌 r	naturally pro	blematic?	(If nee	eded, explain any answers in Remarks.)
Summary of Findings - Att	tach site n	nap sh	owing sa	mpling p	oint loc	ations, transects, important features, etc.
Hydrophytic Vegetation Present?	Yes • No	0 0				· ·
Hydric Soil Present?	Yes • No	o O			Sampled A	
Vetland Hydrology Present?	_	o O		withi	n a Wetland	d? Yes ● No ○
Remarks:						
Data point occurs in wetland depres	ssion immediat	tely west	of the vegeta	ation transec	t.	
		,	J			
VEGETATION - Use scient	tific names	s of pla	ants	DominantSpecies?	FWS Re	gion: -?-
(2)	Dad' -)			Rel.Strat.	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30 Foot	Radius)		% Cover	Cover	Status	Number of Dominant Species
1				<u> </u>		That are OBL, FACW, or FAC: 2 (A)
2			0	Н		Total Number of Dominant
4.				H		Species Across All Strata:3(B)
				= Total Co		Percent of dominant Species
Sapling/Shrub Stratum (Plot size: _	15 Foot Radius)		- rotar co	, vei	That Are OBL, FACW, or FAC: 66.7% (A/B)
1			0			Prevalence Index worksheet:
2						Total % Cover of: Multiply by:
3						OBL species 30 x 1 = 30
4			0	<u></u>		FACW species 30 x 2 = 60
5						FAC species $0 \times 3 = 0$
(5)			0	= Total Co	over	FACU species $35 \times 4 = 140$
Herb Stratum (Plot size: 5 Foot R	adius)					UPL species $0 \times 5 = 0$
				31.6%		Column Totals:95 (A)230 (B)
Elymus repens Hordeum jubatum				✓ 31.6% ✓ 31.6%	FACU FACW	Prevalence Index = B/A = 2.421
4. Schedonorus pratensis				5.3%	FACU	·
5.				0.0%	17100	Hydrophytic Vegetation Indicators:
6.			0	0.0%		1 - Rapid Test for Hydrophytic Vegetation
7.			0	0.0%		✓ 2 - Dominance Test is > 50%
8.			0	0.0%_		✓ 3 - Prevalence Index is ≤3.0 ¹
9. 10.						4 - Morphological Adaptations (Provide supporting
10.						data in Remarks or on a separate sheet)
			95	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
/DI-1-1-						¹ Indicators of hydric soil and wetland hydrology must be present.
Woody Vine Stratum (Plot size:				Ц		
1						
						Hadarahad a
1 2			0	= Total Co	over	Hydrophytic Vegetation
12				= Total Co	over	

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Soil Sampling Point: DP-1W

Depth		1atrix			Rec				· _		_	
inches)	Color (m		<u>%</u>	Color	(moist)	%	Tvpe 1	Loc ²		xture		Remarks
0-2	2.5Y	3/2							Clay Loam			
2-20	2.5Y	3/3							Clay Loam	1		
											_	
upe: C-Con	ncentration. D	-Depletio	n PM-Padur	od Matrix		ed or Coat	red Sand Gr	ains 21 oc	ation: DI –Do	ore Lining. M=1	Matrix	
•	ndicators: (•						allis -Luca			lematic Hydri	: Soils ³ :
Histosol (A	A1)				andy Gleyed	Matrix S4			_ 10	cm Muck (A9) ((LRR I, J)	
Histic Epip					andy Redox	(S5)			☐ Co	astal Prairie Re	edox (A16) (LRF	R F, G, H)
Black Histi	. ,			=	tripped Matri	. ,			Da	ork Surface (S7) (LRR G)	
	Sulfide (A4)				oamy Mucky	-	-		L Hig	gh Plains Depre	essions (F16)	
	Layers (A5) (LI	•			oamy Gleyed	•	2)		_	(LRR H outsid	de of MLRA 72	and 73)
	(A9) (LRR F,		1)	=	epleted Mati					educed Vertic (F	•	
	Below Dark Su	-	1)	=	edox Dark Si		•			ed Parent Mater	` '	
	k Surface (A12 ck Mineral (S1	,			epleted Dark	•	r/)		_	•	k Surface (TF12	2)
,	ck Minerai (S1 _. icky Peat or Pe		DD C LI	_	edox depres igh Plains De	, ,	(E16)			her (Explain in	-	
	cky Peat of Pea			_ п	gn Plains De MLRA 72)	•	` '		³ Indicat	ors of hydroph	ytic vegetation	and wetland sturbed or probler
	•	. , .	,		(. 16107 / 2	/ 5 0			TiyuTOIO	ay must be ble	Jene, unices un	carbed or problet
urictive La	ayer (if prese	:ITT):							1			
Туре:	205):								Hydric S	oil Present?	Yes	No O
Type:	nes):								Hydric S	oil Present?	Yes •	No O
Type: Depth (inchemarks:												
Type: Depth (inchemarks:	it currently la								elopment. (Given soil cra	cks it is evide	
Type: Depth (inch marks: s at this pi	it currently la								elopment. (cks it is evide	
Type: Depth (inch marks: s at this pi ression sa	it currently la turates for e								elopment. (Given soil cra	cks it is evide	
Type: Depth (inch marks: s at this pi ression sa drology tland Hydr	it currently la turates for e	xtended	periods dur	ing the	growing se	ason and			elopment. (s will devel	Given soil cradop over time.	cks it is evide ators (minimu	nt that the
Type:	it currently la turates for e / rology Indica cators (minin	xtended	periods dur	ing the	growing se	ason and			elopment. (s will devel	Given soil crace op over time.	cks it is evide ators (minimu I Cracks (B6)	nt that the um of two requi
Type:	it currently laturates for e	xtended	periods dur	ing the g	growing se all that ap Salt Crust (E	ply)	l hydric soi		elopment. (s will devel	Given soil cracop over time. condary Indic Surface Soil Sparsely Ve	cks it is evider . ators (minimula Cracks (B6) getated Concav	nt that the um of two requi
Type:	it currently laturates for e	xtended	periods dur	I; check	growing se all that ap Salt Crust (I Aquatic Inve	ply) 311) ertebrates	l hydric soi		elopment. (s will devel	Given soil cracop over time. condary Indic Surface Soil Sparsely Ve	cks it is evide ators (minimu I Cracks (B6)	nt that the um of two requi
Type:	it currently laturates for e	xtended	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve	ply) 311) ertebrates ulfide Odo	(B13)		elopment. (s will devel	condary Indic Surface Soil Sparsely Ve	ators (minimula Cracks (B6) egetated Concavaterns (B10)	nt that the um of two requi
Type:	rology Indicators (minimater (A1) er Table (A2) n (A3)	xtended	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season	ply) 311) ertebrates ulfide Odo Water Tab	(B13) r (C1) ble (C2)	l indicator	elopment. (s will devel	condary Indice Surface Soil Sparsely Ve Drainage Pa	ators (minimula Cracks (B6) egetated Concavaterns (B10)	nt that the um of two require Surface (B8)
Type:	rology Indicators (minimater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)	ators:	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve	ply) 311) ertebrates ulfide Odo Water Tab	(B13) r (C1) ble (C2)	l indicator	elopment. (s will devel	condary Indice Surface Soil Sparsely Ve Drainage Pa	ators (minimulators (B10) getated Concavatterns (B10) nizospheres on le	nt that the um of two require Surface (B8)
Type:	rology Indicators (minimater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)	ators:	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh	ply) 311) ertebrates ulfide Odo Water Tab	(B13) r (C1) ole (C2) s on Living F	l indicator	elopment. (s will devel	condary Indice Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (where	ators (minimulators (B10) getated Concavatterns (B10) nizospheres on le	um of two require Surface (B8)
Depth (inch marks: s at this pi ression sai drology tland Hydi mary Indio Surface W High Wate Saturation Water Ma Sediment Drift depo	rology Indicators (minimater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)	ators:	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh	ply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled	(B13) r (C1) ole (C2) s on Living F	l indicator	elopment. (s will devel	Condary Indice Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (where Crayfish Bu Saturation	ators (minimulators (B10)) atterns (B10) nizospheres on le e tilled) rrows (C8)	um of two require Surface (B8)
Depth (inch marks: s at this pi ression sai drology tland Hydi mary Indio Surface W High Wate Saturation Water Ma Sediment Drift depo	rology Indicators (minimater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4)	ators:	periods dur	I; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where	ply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled	(B13) r (C1) ble (C2) s on Living F (Iron (C4)	l indicator	elopment. Cs will devel	condary Indice Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (where Crayfish Bu Saturation V Geomorphic	ators (minimulators (B10) nizospheres on le tilled) rrows (C8) Visible on Aerial	um of two requires Surface (B8)
Type:	rology Indicators (minimater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4)	ators:	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where Presence of	ply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled Reduced I Surface (C7	(B13) r (C1) ble (C2) s on Living F (Iron (C4)	l indicator	elopment. Cs will devel	condary Indices Condary Indices Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (when Crayfish Bu Saturation V Geomorphices FAC-neutra	ators (minimulators (B10) nizospheres on le tilled) rrows (C8) Visible on Aerial	im of two requires Surface (B8) Living Roots (C3) Imagery (C9)
Type:	rology Indicators (minimater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5)	ators: num of c	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where Presence of Thin Muck S	ply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled Reduced I Surface (C7	(B13) r (C1) ble (C2) s on Living F (Iron (C4)	l indicator	elopment. Cs will devel	condary Indices Condary Indices Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (when Crayfish Bu Saturation V Geomorphices FAC-neutra	ators (minimulators (B10) ators (B10) ator	int that the im of two require Surface (B8) Living Roots (C3) Imagery (C9)
Type:	rology Indicacators (minimal / ater (A1) er Table (A2) er (A3) erks (B1) Deposits (B2) or Crust (B4) osits (B5) en Visible on Admined Leaves (I	ators: num of c	periods dur	l; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where Presence of Thin Muck S	ply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled Reduced I Surface (C7	(B13) r (C1) ble (C2) s on Living F (Iron (C4)	l indicator	elopment. Cs will devel	condary Indices Condary Indices Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (when Crayfish Bu Saturation V Geomorphices FAC-neutra	ators (minimulators (B10) ators (B10) ator	int that the im of two requir re Surface (B8) Living Roots (C3) Imagery (C9)
Type:	rology Indicators (mining/ater (A1)) er Table (A2) in (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) in Visible on Acained Leaves (Indicators)	ators: num of c	periods dur	I; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where Presence of Thin Muck S	pply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled Reduced I Surface (C7	(B13) r (C1) ble (C2) s on Living F (Iron (C4)	l indicator	elopment. Cs will devel	condary Indices Condary Indices Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (when Crayfish Bu Saturation V Geomorphices FAC-neutra	ators (minimulators (B10) ators (B10) ator	int that the im of two requir re Surface (B8) Living Roots (C3) Imagery (C9)
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Depth (inchemarks: Is at this piperession said of the piperession of the piper	rology Indicators (minimater (A1) er Table (A2) in (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) in Visible on Adained Leaves (Indicators) Present? esent?	erial Imag	periods dur one requirec ery (B7) No No	I; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Expla	pply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled Reduced I Surface (C7 sin in Rem	(B13) r (C1) ble (C2) s on Living F (Iron (C4)	Roots (C3)	elopment. Cos will devel	condary Indices Condary Indices Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (when Crayfish Bu Saturation V Geomorphices FAC-neutra	ators (minimulators (B10) ators (B10) ator	int that the im of two requir re Surface (B8) Living Roots (C3) Imagery (C9)
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Depth (inch marks: s at this pi ression said drology stland Hydromary India Surface W. High Water Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-Staid dobservater ter Table Prescludes capill	rology Indicators (minimater (A1) er Table (A2) in (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) in Visible on Adained Leaves (Indicators: Present? esent? esent? ary fringe)	erial Images Yes (Yes (periods dur one requirec one No No No	I; check	all that ap Salt Crust (I Aquatic Inve Hydrogen S Dry Season Oxidized Rh (where Presence of Thin Muck S Other (Explain Depth (inc	ply) B11) ertebrates ulfide Odo Water Tab izospheres not tilled Reduced I Gurface (C7 ain in Rem ches):	(B13) r (C1) son Living F (Tron (C4) r) larks)	Roots (C3)	elopment. Cos will devel	condary Indices Condary Indices Surface Soil Sparsely Ve Drainage Pa Oxidized Rh (when Crayfish Bu Saturation V Geomorphices FAC-neutra Frost Heave	ators (minimulators (B10) nizospheres on le tilled) rrows (C8) Visible on Aerial C Position (D2) I Test (D5) Hummocks (D	int that the im of two requir re Surface (B8) Living Roots (C3) Imagery (C9) 7) (LRR F)

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MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	Project Name: Forsyth NW -	Middle 2. MDT Project #: ST	PP 14-6(9)259 3. Control #:	<u>4059</u>				
3.	Evaluation Date: 7/11/18 4. Evaluator(s): Mark Traxler 5. Wetland/Site #(s): Forsyth NW - Middle							
6.	Wetland Location(s): Towns	ship <u>7 N,</u> Range <u>39 E,</u> Section <u>3</u>	33; Township <u>7 N</u> , Range <u>39 E</u> ,	Section 34				
	Approximate Stationing or I	Roadposts: ~262 on US 12						
	Watershed: 14 - Middle Yell	owstone County: Rosebud						
7.	Evaluating Agency: RESPE Purpose of Evaluation: Wetland potentially affer		8. Wetland Size (acre)	(visually estimated) 0.58 (measured, e.g. GPS)				
	☐ Mitigation wetlands; pr☐ Mitigation wetlands; po☐ Other			AA) Size (acre): (visuall rmining AA) 0.58 (measure				
10	✓ Mitigation wetlands; po✓ Other	est-construction		rmining AA) 0.58 (measure				
10	✓ Mitigation wetlands; po✓ Other	est-construction	(see manual for dete	rmining AA) 0.58 (measure				
10	☑ Mitigation wetlands; po☐ Other☐ CLASSIFICATION OF WET	st-construction LAND AND AQUATIC HABITA	(see manual for dete ATS IN AA (See manual for def	rmining AA) <u>0.58</u> (measure	éd, e.g. GPS)			
10		St-construction LAND AND AQUATIC HABITA Class (Cowardin)	(see manual for dete ATS IN AA (See manual for def Modifier (Cowardin)	rmining AA) 0.58 (measure initions.) Water Regime	éd, e.g. GPS) % OF AA			
10		St-construction LAND AND AQUATIC HABITA Class (Cowardin)	(see manual for dete ATS IN AA (See manual for def Modifier (Cowardin)	rmining AA) 0.58 (measure initions.) Water Regime	éd, e.g. GPS) % OF AA			
10		St-construction LAND AND AQUATIC HABITA Class (Cowardin)	(see manual for dete ATS IN AA (See manual for def Modifier (Cowardin)	rmining AA) 0.58 (measure initions.) Water Regime	éd, e.g. GPS) % OF AA			
10		St-construction LAND AND AQUATIC HABITA Class (Cowardin)	(see manual for dete ATS IN AA (See manual for def Modifier (Cowardin)	rmining AA) 0.58 (measure initions.) Water Regime	éd, e.g. GPS) % OF AA			

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.

	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 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		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.

								We	tland	l/Site	#(s): <u>Fo</u>	rsyth I	VW -	Middle							
14	A. HABITAT FOR FEDERAL	LLY LIS	STED	OR F	ROP	OSED	THRE	EATEN	ED (OR E	NDANG	ERED	PLA	NTS C	R AN	IMALS	S				
	AA is Documented (D) or Si Primary or critical habitat (list Secondary habitat (list specience) Incidental habitat (list specience) No usable habitat	specie es) s)	es) `			S S S															
ii.	Rating: Based on the strong	est hab	oitat c	hosen	in 14	1A(i) at	ove,	select t	he co	orres	ponding	functi	onal p	ooint a	nd rati	ng.				F	
	Highest Habitat Level	Doc/P	rima	y S	Sus/P	rimary	/ Do	c/Sec	onda	ary	Sus/Se	conda	ıry	Doc/li	ncider	ntal	Sus	/Incide	ental	Non	е
	Functional Point/Rating	-			-				•											0L	
Sc	ources for documented use	(e.g. ol	oserv	ations	, reco	ords): <u>L</u>	JSF&V	VS T&I	E list	for R	osebud	Count	<u>.y</u>								
14	B. HABITAT FOR PLANTS Do not include species lis				TED	S1, S2	, OR	S3 BY	THE	MON	ITANA	NATU	RAL	HERIT	AGE I	PROG	RAM				
	AA is Documented (D) or Sommary or critical habitat (list Secondary habitat (list specifuncidental habitat (list specifuncidental habitat (list specifuncidental habitat)	specie es)) to c (S Sca S Gre	arlet A		nia	Amm	itions in annia ro										
ii.	Rating: Based on the strong	gest ha	bitat o	hose	n in 1	4A(i) a	bove,	select	the c	corres	ponding	g funct	ional	point a	nd rat	ing.					
	Highest Habitat Level	Doc/P	rima	y S	Sus/P	rimary	/ Do	c/Sec	onda	ary	Sus/Se	conda	iry	Doc/li	ncider	ntal	Sus/	Incide	ntal	None	
	S1 Species Functional Point/Rating	-			-				-												
	S2 and S3 Species Functional Point/Rating	.9	ЭН		-																
Sc	ources for documented use	(e.a. ot	oserv	ations	reco	rds). M	/TNHI	SOC	repo	ort for	T7N R	39F di	rect c	bserva	ation o	f Amm	anni	a in 20	13		_
	C. GENERAL WILDLIFE HA	. •			,	_						,									
i	Evidence of Overall Wildlife	llea ir	n the	ΔΔ. (Chec	k euhet	tantial	mode	rate	or lo	w haser	l on su	nnort	lina evi	dence	,					
	■ Substantial: Based on any of observations of abundant observations abundant observations of abundant observations of extremely lind interview with local biolog	t wildlife ch as so niting ha jist with	e #s c cat, tr abitat i knov	r high acks, featui vledge	spec nest res no e of th	structu ot avail	res, g	àme tra	ails, e	etc.	od)	⊠ f ⊠ l □ s	ew or ittle to sparse	r no wil o no wi e adjac	Idlife o Idlife s ent up	bserva sign bland fo	ations ood s	llowing s during sources vith kno	g peak	use p	
	☐ observations of scattered☐ common occurrence of w☐ adequate adjacent upland☐ interview with local biolog	wildlife ildlife si d food s	grou ign su source	ps or ich as es	indivi scat	, tracks							perio	ds							
ii.	Wildlife Habitat Features: V	Vorkino	from	top to	o bott	om. ch	eck a	iraorao	ate A	AA att	ributes	in matı	ix to	arrive a	at ratir	na. Str	ructui	ral dive	rsitv is	from a	#13.
Fc	or class cover to be considered	d eveni	y dist	ribute	d, the	most	and le	ast pre	valer	nt ve	getated	classe	es mu	ist be v	vithin 2	20% of	f eac				
	rcent composition of the AA (ınial;				
3/	I = seasonal/intermittent; T/E Structural Diversity (see #13)	- temp	Orary	ерпе		, and <i>F</i> High	1 – au:	sent [S	ee III	lariua	i ioi iuit			derate		emisj.				.ow	
	Class Cover Distribution (all vegetated classes)		□ E	ven			☐ Un	even			⊠E	ven			☐ Un	even			□ E	ven	
	Duration of Surface	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
	Water in ≥ 10% of AA □ Low Disturbance at AA										-										
	(see #12i)																				
											Н										
	☐ High Disturbance at AA (see #12i)																				
;;;	. Rating: Use the conclusion	e from	i and	ii aho	VA an	ıd the r	natriv	helow	to eo	alect t	he func	lional r	oint	and rot	ina						
	Evidence of Wildlife Use						/ildlife	e Habit			es Rati	ng (ii)			iiig. □ Lo		7				
ŀ	(i) ☐ Substantial		_ ⊏ X(eptio	ııdl		K	High		1		oderat	년			w	-				
ŀ	☐ Moderate																				

 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	etlano	d/Site	#(s): <u>Fo</u>	orsyth I	NW - I	Middle	<u> </u>				
4D. GENERAL FISH HABIT If the AA is not used by entrapped in a canal], t	fish, fish	use is		storab	le due	to ha		onstra	ints, c	or is not	desire	d fron	n a ma	anagen	nent pe	erspec	tive [s	uch as fi
Assess this function if t precluded by perched of					existin	g situa	ation is	corr "corr	ectab	e" such	n that t	he AA	could	be use	ed by f	ish [i.e	e., fish	use is
Type of Fishery:	old Wate	er (CW	') 🗆 '	Warm	Water	(WW) Use	the C	CW or	WW gı	ıideline	es in th	ie mar	ual to	comple	ete the	matrix	
. Habitat Quality and Know	n / Susp	ected	Fish S	pecie	s in A	A: Us	se mat	rix to	select	the fun	ctional	point	and r	ating.				
Duration of Surface Water in AA	_	erman	ent / P	erenn	ial		□s	easoı	nal / Ir	ntermit	tent		□	empoi	rary / E	Ephen	neral	
Aquatic Hiding / Resting Escape Cover] imal	Adeq] uate	Po	oor	Opti] imal	Ade	_ quate	∟ Po	or	Opt	timal	Aded] uate	Po	or
Thermal Cover: optimal / suboptimal	0	s	0	s	0	s	0	s	0	S	0	S	0	S	0	S	0	S
FWP Tier I fish species																		
FWP Tier II or Native Game fish species										-	I			-		1		
FWP Tier III or Introduced Game fish									-	I	I			I		1		
FWP Non-Game Tier IV on No fish species	r																	
MDEQ list of waterbodies in rigupport, or do aquatic nuisant of Does the AA contain a doctative fish or introduced game. II. Final Score and Rating: Applies only to wetland lif wetlands in AA are not contained. Entrenchment Ratio (ER) Estiond-prone width = estimated.	ce plant of the pl	spawing YES nents: Spawing YES nents: Spawing YES nents:	nal spening are 5, add t NA (project to floin-char manual	cies (sea or coo score)	see Apother core in i core to 14F you in recover be difficultion	ppend ritical or iia () -chani ank flo	habita 1.1 = _ nel or oow, ch	occur i t featu _ or overba eck th	in fish ure (i.e No ank flo	habitat	? \[\frac{1}{2} \] tuary p d proce tio = (f	ES, ropool, up	educe pwellii 14F.	score ng area	in i by a; spec	0.1 = cify in c	or comme	⊠ N0 ents) for
/ lood prone width / bankfull wi	= dth = en	renchr	ment ra	tio		2 x I	Bankfu	ll Dept	h	Ban	ıkfull D	epth		3/4/	dustry.	Flo Bankfi		ne Width th
Slightly Er ER ≥	2.2					ER =	ly Enti 1.41 –	2.2	ed	Δ .			ER =	renche 1.0 –	1.4	<u> </u>		
C stream type D stream		E St	ream ty	pe		B SIN	eam ty	rpe		A STR	eam typ	Je J	r sti	ream ty	rpe	G Sti	ream t	уре
Detings Working from to a			h =	المطايداء	4		41a - E	4:			_4:							

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 Ent	renched	☐ Entrenched			
(Rosgen 1994, 1996)	C, D	, E stream t	ypes	Е	stream typ	e	A, F,	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 - Middle

14	F. 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].

Estimated Maximum Acre Feet of Water Contained in Wetlands within the AA that are Subject to Periodic Flooding or Ponding		>5 acre fo	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					.6M				
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 inpu
	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.	ial to delivor compou other funct lly impaire tion, sourc	er sedime nds 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 A 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 14)

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%		.6M					
☐ < 35%							

Comments: In 2015, observed increased percent cover by wetland species with stability ratings greater than or equal to six.

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		☐ Vegetated Component >5 acres					☑ Vegetated Component 1-5 acres				☐ Vegetated Component <1 acre							
В	B ☐ High ☐ Moderate			Low	_ 	ligh	⊠ Mo	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				-						.3L								
T/E/A																		

15. GENERAL SITE NOTES: _____

14I. PRODUCTION EXPORT / FOOD CHAIN								
the Manager of Parkinson At 1 AA 199 1	SUPPORT (contin	nued)						
iii. Modified Rating: Note: Modified score ca	nnot exceed 1.0 o	r be less than	0.1.					
Vegetated Upland Buffer: Area with ≥ 30 mowing or clearing (unless for weed controls there an average ≥ 50-foot wide vegetate	ol).				_	•	·	
iv. Final Score and Rating: <u>.3L</u> Comments	s :							
14J. GROUNDWATER DISCHARGE / RECH Check the appropriate indicators in i and								
i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known or ob Vegetation growing during dormal Wetland occurs at the toe of a nat Seeps are present at the wetland AA permanently flooded during dr Wetland contains an outlet, but no	nt season/drought tural slope. edge. ought periods. o inlet.		☐ Perr ☐ Wet ☐ Stre	land contains	s ate present wi inlet but no ou n 'losing' strea	ıtlet.	, , ,	0 ,
iii. Rating: Use the information from i and ii a								a
		Saturation at <i>I</i> ATER THAT I						
Criteria	□ P/P	□ S		<u> </u>	GROONDWA	□ No		
☐ Groundwater Discharge or Recharge								
☐ Insufficient Data/Information		•		NA	•			1
Replacement Potential for ass	contains fen, bo rings or mature (rested wetland Of sociation listed a	og, warm >80 yr-old) ⋜ plant	AA doe cited ra diversi contain	es not contai are types ANI ity (#13) is hig ns plant asso	Structural gh OR ciation	previou associa	es not contai usly cited rar ations AND s	e types OR structural
Replacement Potential Replacement Potential	contains fen, bo rings or mature (ested wetland Of sociation listed a MTNHP	og, warm >80 yr-old) ⋜ plant s "S1" by	AA doe cited ra diversi contain listed a	es not contai are types ANI ity (#13) is hig ns plant asso as "S2" by th	o structural gh OR ciation e MTNHP	previou associa diversi	usly cited rar ations AND s ty (#13) is lo	e types OR tructural w-moderate
Replacement Potential Restimated Relative Abundance (#11)	contains fen, borings or mature (a ested wetland Officiation listed a mTNHP	og, warm >80 yr-old) ⋜ plant s "S1" by	AA doe cited ra diversi contain listed a	es not contai are types ANI ity (#13) is hig ns plant asso as "S2" by th	Structural gh OR ciation	previou associa diversi	usly cited rar ations AND s ty (#13) is low	e types OR tructural w-moderate
Replacement Potential Restimated Relative Abundance (#11) Low Disturbance at AA (#12i) AA spi for ass the	contains fen, borings or mature (a ested wetland Of sociation listed a em TNHP	og, warm >80 yr-old) ⋜ plant s "S1" by	AA doe cited ra diversi contain listed a	es not contai are types ANI ity (#13) is hig ns plant asso as "S2" by th	o structural gh OR ciation e MTNHP	previou associa diversi	usly cited rar ations AND s ty (#13) is lo	e types OR structural w-moderate Abundan
Replacement Potential Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) Moderate Disturbance at AA (#12i)	contains fen, borings or mature (a ested wetland Of sociation listed a em TNHP	og, warm >80 yr-old) R plant s "S1" by	AA doe cited radiversi contain listed a	es not contai are types ANI ty (#13) is hig ns plant asso as "S2" by th Common	O structural gh OR ciation e MTNHP	previou associa diversi	usly cited rar ations AND s ty (#13) is low	e types OR tructural w-moderate
Replacement Potential Replacement Potential Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: Habitat within AA typical of roadsi 14L. RECREATION / EDUCATION POTENTI. Affords 'bonus' points if AA provides a red i. Is the AA a known or potential recreation. ii. Check categories that apply to the AA:	A contains fen, bo rings or mature (: rested wetland Of sociation listed a MTNHP Rare	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportu	AA doc cited radiversicontain listed a Rare	es not container types ANI ity (#13) is higher splant asso as "S2" by the Common Summary and	O structural gh OR ciation e MTNHP Abundant I Rating page)	previou associa diversit	usly cited rar ations AND s ty (#13) is low Common	e types OR structural w-moderate Abundan2L
Replacement Potential Replacement Potential Replacement Potential Replacement Potential Description of the spirit for asset the service of the spirit for asset the service of the spirit for asset the service of the spirit for asset the spirit for asset the service of the spirit for asset the spirit for asset the service of the spirit for asset the spirit for a	a contains fen, bo rings or mature (: rested wetland Of sociation listed a MTNHP Rare	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportusite? YES yentific Study	AA doc cited radiversicontain listed a Rare	es not container types ANI ity (#13) is higher splant asso as "S2" by the Common Summary and	O structural gh OR ciation e MTNHP Abundant I Rating page)	previou associa diversit	usly cited rar ations AND s ty (#13) is low Common	e types OR structural w-moderate Abundan2L
Replacement Potential Replacement Potential Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: Habitat within AA typical of roadsi 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a red I. Is the AA a known or potential recreation II. Check categories that apply to the AA:	a contains fen, bo rings or mature (: rested wetland OF sociation listed a MTNHP Rare	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportuing site? YES entific Study	AA doc cited radiversi contain listed a Rare	es not container types ANI ity (#13) is higher splant asso as "S2" by the Common Summary and	O structural gh OR ciation e MTNHP Abundant I Rating page)	previou associa diversit Rare	usly cited rar ations AND s ty (#13) is lov Common	e types OR structural w-moderate Abundan2L
Replacement Potential Replacement Potential Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: Habitat within AA typical of roadsi 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a red I. Is the AA a known or potential recreation II. Check categories that apply to the AA:	a contains fen, bo rings or mature (: rested wetland OF sociation listed a MTNHP Rare	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opporture site? YES ientific Study Indirections.	AA doc cited ra diversi contain listed a Rare O Overall unity. G, go to ii. Cons	es not containare types ANI ity (#13) is higher splant assorts see "S2" by the Common Summary and MO, chesumptive Recre	O structural gh OR ciation e MTNHP Abundant I Rating page)	previou associa diversit	usly cited rar ations AND s ty (#13) is low Common	e types OR structural w-moderate Abundan2L
Replacement Potential Replacement Potential Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: Habitat within AA typical of roadsi 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a red I. Is the AA a known or potential recreation II. Check categories that apply to the AA: [III. Rating: Use the matrix below to select the	a contains fen, bo rings or mature (: rested wetland OF sociation listed a MTNHP Rare	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportusite? YES entific Study or Educational access (no point	AA doc cited ra diversi contain listed a Rare O Overall unity. G, go to ii. Cons al Area ermissio	es not containare types ANI ity (#13) is higher splant assorts see "S2" by the Common Summary and MO, chesumptive Recre	O structural gh OR ciation e MTNHP Abundant I Rating page)	previou associa diversit Rare	usly cited rarations AND sty (#13) is low	e types OR structural w-moderate Abundan2L
Replacement Potential Replacement Potential Replacement Potential Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i) Comments: Habitat within AA typical of roadsi 14L. RECREATION / EDUCATION POTENTI Affords 'bonus' points if AA provides a red Is the AA a known or potential recreation Check categories that apply to the AA: Known or Poter Public ownership or public easement with	a contains fen, bo rings or mature () rested wetland Of sociation listed a MTNHP Rare	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportusite? YES entific Study or Educationaccess (no posion required) s, or requiring	AA doc cited ra diversi contain listed a Rare O Overall unity. G, go to ii. Cons al Area ermissio	es not containare types ANI ity (#13) is higher splant assonas "S2" by the Common Summary and NO, chesumptive Recression for publicate in required)	D structural gh OR ciation e MTNHP Abundant I Rating page) eck the NA box eational	previou associa diversiti Rare	usly cited rarations AND sty (#13) is low	e types OR structural w-moderate Abundan2L

B-41

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	mod 0.60	1.00	0.35	*
G. Sediment / Nutrient / Toxicant Removal	high 0.80	1.00	0.46	*
H. Sediment / Shoreline Stabilization	mod 0.60	1.00	0.35	*
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	3.8	9	2.20 Total	Functional Units
Percent of Possibl	e Score 42% (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 <u>wetland</u> component < 1 acre (do <u>not</u> include upland vegetated buffer); and
	Percent of possible score < 35% (round to nearest whole #).
ı	<u></u>
	OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.
_	THE ANAL 1010 AND

RESPEC / MDT WETLAND MITIGATION SITE MONITORING FORM

Assessment Date: Jul Location: ~8 miles NV Milepost: ~262 Legal Description: T	y 11, 201 W of For 2.3 on US 7N	1 <u>8</u> rsyth S 12 R <u>39E</u> Se	Person ection 34	Project Number: n(s) conducting the MDT District: C	assessment Glendive	
Weather Conditions: § Initial Evaluation Date Size of evaluation area	e: <u>Augus</u>	st 15, 2013		Time of Day: 1:0 oring Year: 6 # ounding wetland:	Visits in Ye	ar: <u>1</u>
		Н	YDROLOG	GY		
Surface Water Source Inundation: Absent Percent of assessment Depth at emergent veg If assessment area is n Other evidence of hyd geomorphic position.	area und getation-o oot inund lrology o	Average Depth: der inundation: 0 open water boundated then are the on the site (ex. – c	<u>0 feet</u> Range <u>%</u> dary: <u>0 feet</u> soils satura	of Depths: 0 ted within 12 inch		
Groundwater Monitor Record depth of water			n feet):			
Record depth of water	below g		n feet): Depth	Well Number	Depth	
Record depth of water	below g	ground surface (in		Well Number	Depth	
Record depth of water	below g	ground surface (in		Well Number	Depth	
Record depth of water	below g	ground surface (in		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: <u>4</u> Community Title (main spp): <u>Hordeum jubatum/Eleocharis palustris</u>

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

	/ D 11	
Lomments	/ Problems:	
Communication	/ I IODICHIS.	

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, 2018 Examiner: Mark 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%	
Mulhlenbergia asperifolia	+=<1%	
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	3 = 11-20%	
Elymus repens	1 = 1-5%	
Hordeum jubatum	1 = 1-5%	
Schoenoplectus maritimus	2 = 6-10%	
Tamarix ramosissima	1 = 1-5%	
bare ground	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	5 = > 50%	
Linum lewisii	1 = 1-5%	
Chenopodium album	1 = 1-5%	
Alopecurus arundinaceus	1 = 1-5%	
Bromus tectorum	4 = 21-50%	
Poa compressa	1 = 1-5%	
Melilotus officinale	3 = 11-20%	
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, 2018 Examiner: Lynn Bacon

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 officinales	3 = 11-20%	
Bare Ground	1 = 1-5%	
Hordeum jubatum	2 = 6-10%	
Pascopyrum smithii	4 = 21-50%	
Convolvulus arvensis	1 = 1-5%	
Total Ve	getative 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	4 = 21-50%	
Helianthus annus	1 = 1-5%	
Poa compressa	1 = 1-5%	
Bare ground	1 = 1-5%	
Hordeum jubatum	4 = 21-50%	
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 sp	p.
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%
Total Vegetative Cover:	98%

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

MDT WETLAND MONITORING - VEGETATION TRANSECT

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.

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: 46.321003 / -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	

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.

GPS Checklist:
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.

W	/11	,	D	\mathbf{F}	Н

Birds

Were man-made nesting structures If yes, type of structure: How Are the nesting structures being use Do the nesting structures need repair Mammals and Herptiles	w many? <u>0</u> d? <u>NA</u>	<u>0</u>			
maining and Herpenes		_			
Mammal and Herptile Species	Number Observed	Tracks	Indir Scat	ect Indicatio	on of Use Other
1 1	Observed	Tracks	Scat	Burrows	Other
none observed					
Additional Activities Checklist: NA Macroinvertebrate Sampling (i Comments / Problems:	f required)				

BIRD SURVEY - FIELD DATA SHEET

Site: Forsyth NW - East
Survey Time: 1330 to 1500 Date: <u>7/24/17</u>

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
Cliff Swallow	1	FO	UP				

BEHAVIOR CODES

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

 $\mathbf{F} = \text{Foraging}$ FO = FlyoverL = Loafing

N = Nesting

HABITAT CODES

 $\mathbf{OW} = \mathbf{Open} \ \mathbf{Water}$

AB = Aquatic bed**SS** = Scrub/Shrub **FO** = Forested **UP** = Upland buffer WM = Wet meadowI = IslandMA = Marsh**US** = Unconsolidated shore MF = Mud Flat

Weather: sunny, 80 degrees

Notes:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Forsyth NW - East		Cit	ty/County:	Rosebud		Samp	oling Date: 11-Ju	ıl-18
Applicant/Owner: MDT				State:		Sampling Point:	DP-1	1 U
Investigator(s): Mark Traxler			Section, To		nge: S 34	T 7N	R 39E	
Landform (hillslope, terrace, etc.):	Shoulder slope	ı	Local relief	(concave, c	convex, none): co	oncave	Slope: 5.09	<u>% 2.9</u> °
Subregion (LRR): LRR G		Lat.: 46.3	32092		Long.: -106.83		Datum: ∨	VGS84
Soil Map Unit Name: Harlem silty cla	ov 0 to 2 percent slopes.					I classification:		
re climatic/hydrologic conditions on				s No		olain in Remarks	· - · ·	
Are Vegetation , Soil		significantly di	isturbed?	Are "N	ormal Circumsta		-	0
Are Vegetation, Soil		naturally probl			eded, explain any	-	marks)	
				•			•	ros oto
Summary of Findings - At	Yes No	owing San	nping p		auons, trans	sects, impo	rtant reatu	res, etc.
Hydrophytic Vegetation Present?	Yes O No O		Is the	Sampled A	ırea			
Hydric Soil Present?	Yes O No •		withir	ı a Wetland	$_{ extsf{1?}}$ Yes $^{ extsf{O}}$ No $^{ extsf{O}}$	•		
Wetland Hydrology Present?								
Remarks: Upland data point. Slope above we	etland.							
:			= ••	TIME DO	-:an: CD			
VEGETATION - Use scien	itific names of pia		Dominant Species?	FW3 NE	gion: GP			
Tree Stratum (Plot size: 30 Foo	ot Radius)	Absolute % Cover		Indicator Status				
1.				Juli	Number of Domii That are OBL, FA		0	(A)
2			<u> </u>		·	·		(1.7)
3		ο [Total Number of Species Across A		2	(B)
4.		0						(-)
(Dist size)	45 Feet Boding)	0	= Total Co	ver	Percent of dom That Are OBL,		0.0%	(A/B)
Sapling/Shrub Stratum (Plot size:		٥ [\neg			-		_ ` ` `
1		_	╣		Prevalence Inde			
2 3			╣		Total % (Multiply by:	_
4		Г	<u>_</u>		OBL species		x 1 = <u>0</u>	_
5		0	<u> </u>		FACW species		x 2 = <u>2</u> x 3 = <u>0</u>	_
		0	= Total Co	ver	FAC species FACU species		x 3 =	
Herb Stratum (Plot size: 5 Foot	Radius)	_			UPL species		x 4 =	
			71.4%	FACU	Column Total	•	(A) 362	
			27.5%	FACU				_ (6)
3. Muhlenbergia asperifolia 4.		$-\frac{1}{2}$		FACW	Prevalence	Index = B/A =	3.978	
5.		0 [Hydrophytic Ve	getation Indicat	tors:	
6.		[0.0%		✓ 1 - Rapid T	est for Hydroph	ytic Vegetation	
7.		0	0.0%		2 - Domina	nce Test is > 50)%	
8.		0	0.0%		3 - Prevale	nce Index is ≤3	.0 ¹	
9. 10.		0[4 - Morpho	ological Adaptati	ons ¹ (Provide su	pporting
10						emarks or on a	-	1-1-3
		91	= Total Co	ver			egetation ¹ (Expl	•
Woody Vine Stratum (Plot size:					¹ Indicators of be present.	f hydric soil and	wetland hydrol	ogy must
1								
2					Usad nombustia			
% Bare Ground in Herb Stratum	10	0	= Total Co	ver	Hydrophytic Vegetation Present?	Yes • No	0	
					Present?	165 9 116		
Remarks:								
Slopes dry, some bare ground occu	urs in patches.							

US Army Corps of Engineers

Soil Sampling Point: DP-1U

Profile Description: (Describe to the depth needed to document the indicator or compete Matrix Redox Features		,	
(inches) Color (moist) % Color (moist) % Type 1	Loc2	Texture	Remarks
0-20 2.5Y 3/3 100	(Clay Loam	
Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grain	s ² l ocatio	n: PL=Pore Lining. M=M	atrix
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Proble	
Histosol (A1) Sandy Gleyed Matrix S4		1 cm Muck (A9) (L	
Histic Epipedon (A2) Sandy Redox (S5)		= ' ' '	dox (A16) (LRR F, G, H)
Black Histic (A3) Stripped Matrix (S6)		Dark Surface (S7)	(LRR G)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1)		High Plains Depre	` '
Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F2) 1 cm Muck (A9) (LRR F,G,H) Depleted Matrix (F3)		_ `	e of MLRA 72 and 73)
1 cm Muck (A9) (LRR F,G,H) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6)		Reduced Vertic (F	•
Thick Dark Surface (A12) Depleted Dark Surface (F7)		Red Parent Materi Very Shallow Dark	` '
Sandy Muck Mineral (S1) Redox depressions (F8)		Other (Explain in	` ,
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16)		_ ` ` '	tic vegetation and wetland
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 and 73 of LRR H)			ent, unless disturbed or problem
strictive Layer (if present):			
Type:			
Type: Depth (inches):		Hydric Soil Present?	Yes ○ No •
		Hydric Soil Present?	Yes ○ No •
Depth (inches):		Hydric Soil Present?	Yes ○ No •
Depth (inches):		Hydric Soil Present?	Yes ○ No •
Depth (inches): emarks:		Hydric Soil Present?	Yes ○ No •
Depth (inches):emarks: hydric soil indicators present.		Hydric Soil Present?	Yes ○ No ●
Depth (inches):emarks: hydric soil indicators present. ydrology		<i>,</i>	Yes ○ No ●
Depth (inches):emarks: hydric soil indicators present. ydrology etland Hydrology Indicators:		<i>,</i>	tors (minimum of two requir
Depth (inches):emarks: hydric soil indicators present. /drology etland Hydrology Indicators:		Secondary Indica	tors (minimum of two requir
Depth (inches):emarks: hydric soil indicators present. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply)		Secondary Indica	tors (minimum of two requir Cracks (B6) Jetated Concave Surface (B8)
Depth (inches):emarks: hydric soil indicators present. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1)		Secondary Indica Surface Soil Sparsely Vec	tors (minimum of two requir Cracks (B6) Jetated Concave Surface (B8)
Depth (inches):emarks: hydric soil indicators present. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1)		Secondary Indica Surface Soil Sparsely Vec	tors (minimum of two requir Cracks (B6) Jetated Concave Surface (B8) Literns (B10) Zospheres on Living Roots (C3)
Depth (inches):emarks: hydric soil indicators present. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1)		Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi	tors (minimum of two requir Cracks (B6) Jetated Concave Surface (B8) Literns (B10) Zospheres on Living Roots (C3) tilled)
Depth (inches):		Secondary Indica Surface Soil Sparsely Vec Drainage Pa Oxidized Rhi (where	tors (minimum of two requir Cracks (B6) Jetated Concave Surface (B8) Literns (B10) Zospheres on Living Roots (C3) tilled)
Depth (inches):emarks: hydric soil indicators present. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1)		Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Burn Saturation V	tors (minimum of two require Cracks (B6) Jetated Concave Surface (B8) Literns (B10) Zospheres on Living Roots (C3) tilled) Tows (C8)
Depth (inches):		Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Burn Saturation V	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) sterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2)
Depth (inches):		Secondary Indica Surface Soil Sparsely Vec Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) sterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2)
Depth (inches):		Secondary Indica Surface Soil Sparsely Vec Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) cterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5)
Depth (inches):		Secondary Indica Surface Soil Sparsely Vec Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic	tors (minimum of two require Cracks (B6) letated Concave Surface (B8) leterns (B10) leterns (B2) leterns (B3) leterns (B3) leterns (B3) leterns (B3) leterns (B4) lete
Depth (inches):		Secondary Indica Surface Soil Sparsely Vec Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic	tors (minimum of two require Cracks (B6) letated Concave Surface (B8) leterns (B10) leterns (B2) leterns (B3) leterns (B3) leterns (B3) leterns (B3) leterns (B4) lete
Depth (inches):		Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic	tors (minimum of two require Cracks (B6) letated Concave Surface (B8) leterns (B10) leterns (B2) leterns (B3) leterns (B3) leterns (B3) leterns (B3) leterns (B4) lete
Depth (inches):	ots (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) cterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches):	ots (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Bur Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) cterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches):	ots (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two require Cracks (B6) petated Concave Surface (B8) etterns (B10) gospheres on Living Roots (C3) tilled) rows (C8) disible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches): Depth	ots (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) cterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches):	ots (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) cterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible on Aerial Imagery (C9) Position (D2) Test (D5) Hummocks (D7) (LRR F)
Depth (inches): Permarks: Permarks:	ots (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pa Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two requir Cracks (B6) letated Concave Surface (B8) cterns (B10) zospheres on Living Roots (C3) tilled) rows (C8) isible 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 - East		City/County:	Rosebud	Sampling Date: 11-Jul-18
Applicant/Owner: MDT			State:	:: MT Sampling Point: DP-1W
nvestigator(s): Mark 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
ubregion (LRR): LRR G	Lat.: 46.	.320943		Long.: -106.838674 Datum: WGS84
oil Map Unit Name: Harlem silty clay, 0 to 2 percent slopes,				NWI classification: PEM
e climatic/hydrologic conditions on the site typical for this t			s • No C	
	significantly of			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?		withir	ı a Wetland	_{d?} Yes No
Remarks:				
Wetland data point.				
·				
			TIME De	
VEGETATION - Use scientific names of pla	ınts	Dominant Species?	FW5 KE	gion: GP
Tree Stratum (Plot size: 30 Foot Radius_)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	-	Covei	Status	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2			-	That are OBL, FACW, or FAC: 1 (A)
3.	0			Total Number of Dominant
4.				Species Across All Strata: (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				OBL species <u>80</u> x 1 = <u>80</u>
4				FACW species $5 \times 2 = 10$
J		= Total Co		FAC species $\underline{5}$ x 3 = $\underline{15}$
Herb Stratum (Plot size: 5 Foot Radius)		- 10tai Co	VEI	FACU species $0 \times 4 = 0$
1 et al de	80	✓ 88.9%	OBL	UPL species $0 \times 5 = 0$
Eleocharis palustris Rumex crispus		5.6%	FAC	Column Totals: <u>90</u> (A) <u>105</u> (B)
3. Hordeum jubatum	5	5.6%	FACW	Prevalence Index = B/A =1.167
4.	0	0.0%		Hydrophytic Vegetation Indicators:
5		0.0%		
6		0.0%		✓ 1 - Rapid Test for Hydrophytic Vegetation
8.		0.0%		✓ 2 - Dominance Test is > 50% ✓ 3 - Prevalence Index is ≤3.0 ¹
9.		0.0%		
10.		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)				¹ Indicators of hydric soil and wetland hydrology must
WOOD VINE STRATIIM (1100 3126. 30 1 000 Hadias)	0			be present.
1				
	0	= Total Co	ver	Hydrophytic
1		= Total Co	ver	Vegetation
1	0	= Total Co	ver	

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Soil Sampling Point: DP-1W

Depth (inches) 0-20	-	ine deptir need			onfirm the a	absence of indicators.)	
	Matrix Color (moist)	%	Kea Color (moist)	ox Features <u> % Type</u> 1	Loc2	Texture	Remarks
	2.5YR 3/2		2.5Y 4/4	10 C	PL	Clay Loam	
1Type: C=Co	ncentration. D=Depletio	n RM=Reduced	Matrix CS=Covere	ed or Coated Sand Gr	rains 21 ocat	tion: PL=Pore Lining. M=Matri	·
• • • • • • • • • • • • • • • • • • • •	Indicators: (Applicab				ans Local	Indicators for Problema	
Histosol (ic to un Ettis,	Sandy Gleyed	•		1 cm Muck (A9) (LRR	•
	pedon (A2)		Sandy Redox (Coastal Prairie Redox	
Black Hist	tic (A3)		Stripped Matri	x (S6)		Dark Surface (S7) (LR	
	n Sulfide (A4)		Loamy Mucky	Mineral (F1)		High Plains Depressio	ns (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	` '		Reduced Vertic (F18)	
_ :	rk Surface (A12)	1)	Redox Dark Su Depleted Dark	. ,		Red Parent Material (•
	ıck Mineral (S1)		Redox depress	` ,		Very Shallow Dark Su	, ,
= '	ucky Peat or Peat (S2) (LRR G, H)		pressions (F16)		Other (Explain in Rem	•
	cky Peat or Peat (S3) (LR			and 73 of LRR H)		³ Indicators of hydrophytic whydrology must be present	regetation and wetiand , unless disturbed or problematic.
Restrictive L	ayer (if present):					T	·
Type:	, (p).						
Depth (inc	thes):					Hydric Soil Present?	res ● No O
Remarks:						•	
Prominent re	dox concentraions no	ted.					
Hydrolog	У						
Wetland Hyd	drology Indicators:					Secondary Indicator	s (minimum of two required)
Primary Indi	icators (minimum of o	one required; o	check all that app	oly)		✓ Surface Soil Cra	cks (B6)
Surface V	Water (A1)		Salt Crust (B	11)		Sparsely Vegeta	ted Concave Surface (B8)
	ter Table (A2)		Aquatic Inve	rtebrates (B13)		Drainage Patteri	oc (B10)
High Wat	on (A3)		Hydrogen Si	16-1- 0-1 (61)			IS (DIO)
High Wat Saturatio	aula (D1)			ılfide Odor (C1)		_	oheres on Living Roots (C3)
	arks (B1)			Water Table (C2)		_	oheres on Living Roots (C3)
Saturatio Water Ma	t Deposits (B2)		Dry Season		Roots (C3)	Oxidized Rhizos	oheres on Living Roots (C3)
Saturatio Water Ma	` '		Dry Season \ Oxidized Rhi	Water Table (C2)	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow:	oheres on Living Roots (C3)
Saturatio Water Ma Sediment Drift depo	t Deposits (B2)		Dry Season Oxidized Rhi (where	Water Table (C2) zospheres on Living I	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow:	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9)
Saturatio Water Ma Sediment Drift depo	t Deposits (B2) osits (B3)		Dry Season Oxidized Rhi (where	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4)	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow: Saturation Visible	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) ition (D2)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo	t Deposits (B2) osits (B3) t or Crust (B4)	gery (B7)	Dry Season \ Oxidized Rhi (where Presence of Thin Muck S	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4)	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow Saturation Visibl Geomorphic Pos FAC-neutral Tes	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) ition (D2)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation	t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	gery (B7)	Dry Season \ Oxidized Rhi (where Presence of Thin Muck S	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7)	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow Saturation Visibl Geomorphic Pos FAC-neutral Tes	coheres on Living Roots (C3) (C3) (C8) (C8) (C9) (C9) (ition (D2) (C5)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Imag	gery (B7)	Dry Season \ Oxidized Rhi (where Presence of Thin Muck S	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7)	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow Saturation Visibl Geomorphic Pos FAC-neutral Tes	coheres on Living Roots (C3) (C3) (C8) (C8) (C9) (C9) (ition (D2) (C5)
Saturatio Water Ma Sediment Drift dep Algal Mat Iron Dep Inundatic Water-St	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Imagined Leaves (B9) viations:		Dry Season \ Oxidized Rhi (where Presence of Thin Muck S	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks)	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow Saturation Visibl Geomorphic Pos FAC-neutral Tes	coheres on Living Roots (C3) (C3) (C8) (C8) (C9) (C9) (ition (D2) (C5)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-St Field Observ Surface Water	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Imagrained Leaves (B9) rations: Present? Yes	○ No •	Dry Season Oxidized Rhi Oxidized Rhi (where Presence of Thin Muck S Other (Expla	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	Roots (C3)	Oxidized Rhizos (where till Crayfish Burrow Saturation Visibl Geomorphic Pos FAC-neutral Tes	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) sition (D2) t (D5) nmocks (D7) (LRR F)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-Sto	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Imagrained Leaves (B9) lorations: Present? Yes	○ No •	Dry Season of Oxidized Rhi (where Presence of Thin Muck S Other (Explain	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	_	Oxidized Rhizos (where till Crayfish Burrow Saturation Visibl Geomorphic Pos FAC-neutral Tes	coheres on Living Roots (C3) (C3) (C8) (C8) (C9) (C9) (ition (D2) (C5)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-St Field Observ Surface Water Water Table P	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Imag rations: Present? Yes esent? Yes	○ No •	Dry Season Oxidized Rhi Oxidized Rhi (where Presence of Thin Muck S Other (Expla	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	_	Oxidized Rhizos (where till Crayfish Burrow: Saturation Visible Geomorphic Pos FAC-neutral Tes Frost Heave Hur	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) sition (D2) t (D5) nmocks (D7) (LRR F)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-St Field Observ Surface Water Water Table P Saturation Pre (includes capil	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Imag rations: Present? Yes esent? Yes	No O No O No O	Dry Season Oxidized Rhi	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	Wetla	Oxidized Rhizos (where till Crayfish Burrow: Saturation Visible Geomorphic Pos FAC-neutral Tes Frost Heave Hur	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) sition (D2) t (D5) nmocks (D7) (LRR F)
Saturatio Water Ma Sediment Drift dep Algal Mat Iron Dep Inundatic Water-St Field Observ Surface Water Water Table P Saturation Pre (includes capil Describe Rec	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Image rations: Present? Present? Yes esent? Yes (Bay)	No O No O No O	Dry Season Oxidized Rhi	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	Wetla	Oxidized Rhizos (where till Crayfish Burrow: Saturation Visible Geomorphic Pos FAC-neutral Tes Frost Heave Hur	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) sition (D2) t (D5) nmocks (D7) (LRR F)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-St: Field Observ Surface Water Water Table P Saturation Pre (includes capil	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Image rations: Present? Present? Yes esent? Yes (Bay)	No O No O No O	Dry Season Oxidized Rhi	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	Wetla	Oxidized Rhizos (where till Crayfish Burrow: Saturation Visible Geomorphic Pos FAC-neutral Tes Frost Heave Hur	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) sition (D2) t (D5) nmocks (D7) (LRR F)
Saturatio Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatio Water-St Field Observ Surface Water Water Table P Saturation Pre (includes capil Describe Reco	t Deposits (B2) losits (B3) t or Crust (B4) losits (B5) on Visible on Aerial Image rations: Present? Present? Yes esent? Yes (Bay)	No No No No Ogauge, monitor	Dry Season Oxidized Rhi	Water Table (C2) zospheres on Living I not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	Wetla	Oxidized Rhizos (where till Crayfish Burrow: Saturation Visible Geomorphic Pos FAC-neutral Tes Frost Heave Hur	oheres on Living Roots (C3) ed) s (C8) e on Aerial Imagery (C9) sition (D2) t (D5) nmocks (D7) (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: 11-Ju	ul-18
Applicant/Owner: MDT				State:	: <u>M</u> T	Sampling Point:	DP-	2 U
Investigator(s): Mark Traxler			Section, To	wnship, Ra	ange: S 34	T 7N	R 39E	
Landform (hillslope, terrace, etc.):	Shoulder slope		Local relief	(concave, o	convex, none): co	oncave	Slope: 5.00	<u>2.9</u> °
- Subregion (LRR): LRR G	-	 Lat.: 46	.318471		Long.: -106.83	34693	Datum: V	VGS84
Soil Map Unit Name: Harlem silty cla	w 10 to 2 nercent slones					I classification:		
re climatic/hydrologic conditions on				s • No		plain in Remarks		
Are Vegetation , Soil		significantly			lormal Circumsta		-	0
Are Vegetation , Soil ,		naturally pro			eded, explain any	-		
	_			-			-	
Summary of Findings - At		lowing sa	mpling p	oint ioc	ations, tran	sects, impo	rtant reatu	res, etc.
Hydrophytic Vegetation Present?	Yes No •		Is the	Sampled A	trea			
Hydric Soil Present?	Yes No •		withi	n a Wetland	_{d?} Yes O No (•		
Wetland Hydrology Present?	Yes ● No ○							
Remarks: Upland data point. Moved upland p	oit to pair with new wetl	and pit DP-2V	Ν.					
		-						
				EVA/C D	·			
VEGETATION - Use scien	tific names of pla	ants	Dominant Species?	FWS Re	gion: GP			
	rt Radius N	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Tes	st worksheet:		
1		<u> </u>	Cove	"Status	Number of Domi		0	(A)
2					That are ODE, 17	ACVV, OI TAC.		(^)
3		0			Total Number of Species Across A		1	(B)
4.		0			Species Across A	III Juata.		(0)
		0	= Total Co	over	Percent of dom		0.0%	(A/B)
Sapling/Shrub Stratum (Plot size:	15 Foot Radius				Inal Are Odl,	FACW, or FAC:		(/40)
1			Ц		Prevalence Ind	lex worksheet:		
2							1ultiply by:	_
3 4					OBL species		(1 = 0	_
5.					FACW species		(2 = <u>10</u>	_
		0	= Total Co	ver	FAC species		3 = <u>15</u> 4 = 340	
Herb Stratum (Plot size: 5 Foot F	Radius)				FACU species	0 ,		_
1. Pascopyrum smithii		80	⋖ 84.2%	FACU	UPL species			
		5	5.3%	FACU	Column Total		(A) <u>365</u>	_ (B)
3. Alopecurus arundinaceus			5.3%	FACW	Prevalence	e Index = B/A =	3.842	
4. Rumex crispus 5.		5	5.3%	FAC	Hydrophytic Ve	egetation Indicat	tors:	
6.			0.0%		1 - Rapid T	Test for Hydroph	ytic Vegetation	
7.			0.0%			ance Test is > 50		
8.		0	0.0%		3 - Prevale	ence Index is ≤3	. 0 ¹	
9.		0	0.0%		4 - Morpho	ological Adaptati	ons ¹(Provide รเ	pporting
10.			0.0%			Remarks or on a	-	
		95	= Total Co	ver	Problemati	ic Hydrophytic V	egetation¹ (Exp	lain)
Woody Vine Stratum (Plot size:	30 Foot Radius				Indicators of be present.	f hydric soil and	wetland hydrol	ogy must
1					be present.			
2								
		0	= Total Co	over	Hydrophytic Vegetation	v		
% Bare Ground in Herb Stratum	5				Present?	Yes O No	<u>•</u>	
Remarks:								
Upland vegetation on slope from ro	oad down to wetland.							

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Soil Sampling Point: DP-2U

rofile Description: (Describe to the depth needed Depth Matrix	Redox Featur			· · · · · · · · · · · · · · · · · · ·		
эсрен — — — — — — — — — — — — — — — — — — —		1	OC ²	Texture	Remarks	
0-20 2.5Y 3/2 100			(Clay Loam		
Type: C=Concentration. D=Depletion. RM=Reduced Mat	trix CS=Covered or Coate	ed Sand Grains	2l ocatio	on: PL=Pore Lining. M=M	atrix	
ydric Soil Indicators: (Applicable to all LRRs, unl			Locatio	Indicators for Proble		
	Sandy Gleyed Matrix S4			1 cm Muck (A9) (L	-	
	Sandy Redox (S5)			= ' ' '	dox (A16) (LRR F, G, H)	
	Stripped Matrix (S6)			Dark Surface (S7)		
	Loamy Mucky Mineral (F1			High Plains Depres	ssions (F16)	
	Loamy Gleyed Matrix (F2))		(LRR H outside	e of MLRA 72 and 73)	
	Depleted Matrix (F3)			Reduced Vertic (F:	•	
	Redox Dark Surface (F6) Depleted Dark Surface (F	. 7)		Red Parent Materia	` '	
	Redox depressions (F8)	,,		Very Shallow Dark	` ,	
	High Plains Depressions ((F16)		Other (Explain in F	,	_
5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 and 73 of	` ,			tic vegetation and wetland sent, unless disturbed or p	
strictive Layer (if present):						
Type:						
Type: Depth (inches):			_	Hydric Soil Present?	Yes O No •	
				Hydric Soil Present?	Yes ○ No •	
Depth (inches):emarks:				Hydric Soil Present?	Yes O No •	
Depth (inches):emarks: hydric soil indicators.				Hydric Soil Present?	Yes O No •	
Depth (inches):emarks: hydric soil indicators.				•		requir
Depth (inches):emarks:	ck all that apply)			Secondary Indica	tors (minimum of two	requir
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec				Secondary Indica Surface Soil	tors (minimum of two Cracks (B6)	
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec	Salt Crust (B11)	B13)		Secondary Indica Surface Soil Sparsely Veg	tors (minimum of two Cracks (B6) Jetated Concave Surface (
Depth (inches):emarks: hydric soil indicators. ydrology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec Surface Water (A1) High Water Table (A2)	Salt Crust (B11) Aquatic Invertebrates (•		Secondary Indica Surface Soil Sparsely Veg Drainage Pat	tors (minimum of two Cracks (B6) Jetated Concave Surface (Eterns (B10)	B8)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec	Salt Crust (B11) Aquatic Invertebrates (Hydrogen Sulfide Odor	(C1)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi	tors (minimum of two Cracks (B6) Jetated Concave Surface (Literns (B10) Zospheres on Living Roots	B8)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec] Surface Water (A1) High Water Table (A2)	Salt Crust (B11) Aquatic Invertebrates ((C1) le (C2)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where	tors (minimum of two Cracks (B6) Jetated Concave Surface (Literns (B10) Zospheres on Living Roots tilled)	B8)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec	Salt Crust (B11) Aquatic Invertebrates (Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres	(C1) le (C2) on Living Roots		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where	tors (minimum of two Cracks (B6) Jetated Concave Surface (Iterns (B10) Zospheres on Living Roots tilled) Tows (C8)	B8) s (C3)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec] Surface Water (A1) [High Water Table (A2) [Saturation (A3) [Water Marks (B1) [Sediment Deposits (B2)	Salt Crust (B11) Aquatic Invertebrates (In the Hydrogen Sulfide Odor In Dry Season Water Table	(C1) le (C2) on Living Roots		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V	tors (minimum of two Cracks (B6) letated Concave Surface (Iterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (G	B8) s (C3)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec	Salt Crust (B11) Aquatic Invertebrates (Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled) Presence of Reduced Ir	(C1) le (C2) on Living Roots ron (C4)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic	tors (minimum of two Cracks (B6) letated Concave Surface (sterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (C Position (D2)	B8) s (C3)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec] 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 (B11) Aquatic Invertebrates (In Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled)	(C1) le (C2) on Living Roots on (C4)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral	tors (minimum of two Cracks (B6) letated Concave Surface (sterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (C Position (D2)	B8) s (C3)
Depth (inches):emarks: hydric soil indicators. /drology etland Hydrology Indicators: rimary Indicators (minimum of one required; chec] 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 (B11) Aquatic Invertebrates (i Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled) Presence of Reduced Ir Thin Muck Surface (C7)	(C1) le (C2) on Living Roots on (C4)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral	tors (minimum of two Cracks (B6) letated Concave Surface (cterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (C Position (D2)	B8) s (C3)
Depth (inches):emarks:	Salt Crust (B11) Aquatic Invertebrates (i Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled) Presence of Reduced Ir Thin Muck Surface (C7)	(C1) le (C2) on Living Roots on (C4)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral	tors (minimum of two Cracks (B6) letated Concave Surface (cterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (C Position (D2)	B8) s (C3)
Depth (inches):	Salt Crust (B11) Aquatic Invertebrates (Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled) Presence of Reduced Ir Thin Muck Surface (C7) Other (Explain in Rema	(C1) le (C2) on Living Roots on (C4)		Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral	tors (minimum of two Cracks (B6) letated Concave Surface (sterns (B10) letated Concave Surface	B8) s (C3)
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Depth (inches):emarks: In hydric soil indicators. In hydric soil indicators: In hydric soil indicators: In hydric soil indicators: In hydrology Indicators: In hydric soil in hydric	Salt Crust (B11) Aquatic Invertebrates (Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled) Presence of Reduced Ir Thin Muck Surface (C7) Other (Explain in Rema	(C1) le (C2) on Living Roots on (C4) harks)	- (C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two Cracks (B6) letated Concave Surface (cterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (O Position (D2) Test (D5) Hummocks (D7) (LRR F)	B8) s (C3)
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Depth (inches): demarks: dema	Salt Crust (B11) Aquatic Invertebrates (I) Hydrogen Sulfide Odor Dry Season Water Table Oxidized Rhizospheres (where not tilled) Presence of Reduced Ir Thin Muck Surface (C7) Other (Explain in Rema Depth (inches): Depth (inches):	(C1) le (C2) on Living Roots ron (C4)) arks)	(C3)	Secondary Indica Surface Soil Sparsely Veg Drainage Pat Oxidized Rhi (where Crayfish Burn Saturation V Geomorphic FAC-neutral Frost Heave	tors (minimum of two Cracks (B6) letated Concave Surface (cterns (B10) zospheres on Living Roots tilled) rows (C8) isible on Aerial Imagery (O Position (D2) Test (D5) Hummocks (D7) (LRR F)	B8) s (C3)

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-18
pplicant/Owner: MDT			State:	:: MT Sampling Point: DP-2W
nvestigator(s): Mark 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
ubregion (LRR): LRR G	Lat.: 46	5.318503		Long.: -106.834643 Datum: WGS84
pil 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 of			No One of the control
	naturally pro			eded, explain any answers in Remarks.)
			•	cations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No		<u> </u>		, , , , , , , , , , , , , , , , , , , ,
Hydric Soil Present? Yes • No			Sampled A	
Wetland Hydrology Present? Yes • No •		withir	ı a Wetland	_{d?} Yes No
Remarks:				
New data point in 2018.				
			EVA/C De	
VEGETATION - Use scientific names of pla	ınts	Dominant Species?	FWS KE	gion: GP
Tree Stratum (Plot size: 30 Foot Radius)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	-	Covei	Status	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2			- —	That are OBL, FACW, or FAC: (A)
3	0			Total Number of Dominant
4.				Species Across All Strata: (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				OBL species <u>60</u> x 1 = <u>60</u>
4				FACW species <u>30</u> x 2 = <u>60</u>
5				FAC species $0 \times 3 = 0$
<u>Herb Stratum</u> (Plot size: 5 Foot Radius)	0	= Total Co	ver	FACU species $5 \times 4 = 20$
1	60	✓ 63.2%	OBL	UPL species $0 \times 5 = 0$
Eleocharis palustris Hordeum jubatum		15.8%	FACW	Column Totals: <u>95</u> (A) <u>140</u> (B)
3. Spartina pectinata	45	15.8%	FACW	Prevalence Index = B/A = 1.474
4. Elymus trachycaulus		5.3%	FACU	Hydrophytic Vegetation Indicators:
5	0	0.0%		
6. 7.		0.0%		✓ 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%		 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
10.		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
10	95			
	95			1 Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 Foot Radius)				$^{\rm 1}$ Indicators of hydric soil and wetland hydrology must be present.
				be present.
Woody Vine Stratum (Plot size: 30 Foot Radius) 1		= Total Co		be present. Hydrophytic Vegetation
			over	be present. Hydrophytic

US Army Corps of Engineers

Soil Sampling Point: DP-2W

Profile Descripti	on: (Describe to t Matrix	ine deptir ne		lox Features			
Depth (inches)	Color (moist)	%	Color (moist)	<u>% Tvn</u>	e ¹ Loc²	Texture	Remarks
	10YR 3/2	95	10YR 5/8	5 D		Clay Loam	
			-				
1Type: C=Concen	tration D=Depletion	n RM=Reduc	ed Matrix, CS=Covere	ed or Coated San	d Grains 21 c	cation: PL=Pore Lining. M=I	
	•		s, unless otherwis		d Grains Lo		ematic Hydric Soils ³ :
Histosol (A1)	cators. (Applicat	ic to all Likit	Sandy Gleyed	-		1 cm Muck (A9) (•
Histic Epipedo	on (A2)		Sandy Redox (edox (A16) (LRR F, G, H)
Black Histic (A	(3)		Stripped Matri	x (S6)		Dark Surface (S7	
Hydrogen Sulf	` '		Loamy Mucky			High Plains Depre	essions (F16)
_ '	ers (A5) (LRR F)		Loamy Gleyed	, ,		(LRR H outside	de of MLRA 72 and 73)
	9) (LRR F,G,H) w Dark Surface (A1	1)	✓ Depleted Matr Redox Dark Su			Reduced Vertic (I	•
Thick Dark Su	•	1)	Depleted Dark	, ,		Red Parent Mater	` '
Sandy Muck M	` ,		Redox depress	` '		Very Shallow Dar	, ,
_ '	Peat or Peat (S2) (LRR G, H)		epressions (F16)		Other (Explain in	•
	eat or Peat (S3) (LF			and 73 of LRR	H)		ytic vegetation and wetland sent, unless disturbed or problematio
Restrictive Layer	r (if present):					1	<u> </u>
Type:							
Type: Depth (inches)						Hydric Soil Present?	Yes No
						Hydric Soil Present?	Yes No
Depth (inches) Remarks:	:	atrix.				Hydric Soil Present?	Yes No
Depth (inches) Remarks:		atrix.				Hydric Soil Present?	Yes No
Depth (inches) Remarks:	:	atrix.				Hydric Soil Present?	Yes No
Depth (inches) Remarks:	:	atrix.				Hydric Soil Present?	Yes No
Depth (inches) Remarks: Soil meets criteri	:a for Depleted Ma	ntrix.					
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrology	:a for Depleted Ma		; check all that app	oly)		Secondary Indic	Yes No Cators (minimum of two required) Cracks (B6)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrology	a for Depleted Ma		; check all that app			Secondary Indic	ators (minimum of two required)
Depth (inches) Remarks: Soil meets criteric Hydrology Wetland Hydrolo Primary Indicato	a for Depleted Ma		Salt Crust (B			Secondary Indic	ators (minimum of two required) Cracks (B6)
Depth (inches) Remarks: Soil meets criteric Hydrology Wetland Hydrolo Primary Indicato Surface Wate	a for Depleted Ma		Salt Crust (B	311)		Secondary Indic Surface Soi Sparsely Ve Drainage Pa	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Wate High Water T	a for Depleted Manager Indicators: ors (minimum of or (A1) able (A2) 3)		Salt Crust (B Aquatic Inve	B11) ertebrates (B13)		Secondary Indic Surface Soi Sparsely Ve Drainage Pa Oxidized Rh	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicate Surface Wate High Water T Saturation (A	a for Depleted Manager Indicators: ors (minimum of or r (A1) able (A2) 3) (B1)		Salt Crust (B Aquatic Inve	ertebrates (B13) ulfide Odor (C1)		Secondary Indic Surface Soi Sparsely Ve Drainage Pe Oxidized Ri (when	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) nizospheres on Living Roots (C3) e tilled)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Wate High Water T Saturation (A Water Marks	a for Depleted Ma regy Indicators: ors (minimum of or (A1) able (A2) 3) (B1) posits (B2)		Salt Crust (B Aquatic Inve Hydrogen Su Dry Season Oxidized Rhi	B11) ertebrates (B13) ulfide Odor (C1) Water Table (C2)		Secondary Indic Surface Soi Sparsely Ve Drainage Pe Oxidized Ri (wher	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) nizospheres on Living Roots (C3) e tilled)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Wate High Water T Saturation (A Water Marks Sediment Dep	a for Depleted Ma by Indicators: ors (minimum of or (A1)) able (A2) 3) (B1) cosits (B2) (B3)		Salt Crust (B Aquatic Inve Hydrogen St Dry Season Oxidized Rhi (where	B11) ertebrates (B13) ulfide Odor (C1) Water Table (C2 izospheres on Liv	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Pe Oxidized Rh (where	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) nizospheres on Living Roots (C3) a tilled) rrows (C8)
Depth (inches) Remarks: Soil meets criteric Hydrology Wetland Hydrolo Primary Indicato Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift deposits	a for Depleted Ma by Indicators: ors (minimum of or (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4)		Salt Crust (B Aquatic Inve Hydrogen St Dry Season Oxidized Rhi (where	ertebrates (B13) ulfide Odor (C1) Water Table (C2 izospheres on Liv not tilled) Reduced Iron (C	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Pe Oxidized Rh (where	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) hizospheres on Living Roots (C3) e tilled) rrows (C8) //isible on Aerial Imagery (C9)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicate Surface Watee High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (Iron Deposits	a for Depleted Ma by Indicators: ors (minimum of or (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4)	one required	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where Presence of Thin Muck S	ertebrates (B13) ulfide Odor (C1) Water Table (C2 izospheres on Liv not tilled) Reduced Iron (C	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Po Oxidized Re (where Crayfish Bu Saturation of Geomorphic	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) hizospheres on Living Roots (C3) e tilled) rrows (C8) //isible on Aerial Imagery (C9)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicate Surface Watee High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (C) Iron Deposits	a for Depleted Manager Indicators: ors (minimum of or (A1) able (A2) 3) (B1) cosits (B2) (B3) Crust (B4) (B5) sible on Aerial Image	one required	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where Presence of Thin Muck S	ertebrates (B13) ulfide Odor (C1) Water Table (C2) izospheres on Liv not tilled) Reduced Iron (C urface (C7)	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Po Oxidized Re (where Crayfish Bu Saturation of Geomorphic	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) hizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) t Position (D2) Test (D5)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Watee High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (Iron Deposits Inundation Vi	a for Depleted Manager Indicators: ors (minimum of or (A1)) able (A2) 3) (B1) cosits (B2) (B3) Crust (B4) (B5) sible on Aerial Imaged Leaves (B9)	one required	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where Presence of Thin Muck S	ertebrates (B13) ulfide Odor (C1) Water Table (C2) izospheres on Liv not tilled) Reduced Iron (C urface (C7)	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Po Oxidized Re (where Crayfish Bu Saturation of Geomorphic	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) hizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) t Position (D2) Test (D5)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (Iron Deposits Inundation Vi Water-Staine	a for Depleted Ma by Indicators: ors (minimum of or (A1) able (A2) 3) (B1) cosits (B2) (B3) Crust (B4) (B5) sible on Aerial Imaged Leaves (B9) ns:	one required	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season V Oxidized Rhi (where Presence of Thin Muck S Other (Explain	ertebrates (B13) ulfide Odor (C1) Water Table (C2 izospheres on Liv not tilled) Reduced Iron (C urface (C7) nin in Remarks)	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Po Oxidized Re (where Crayfish Bu Saturation of Geomorphic	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) hizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) t Position (D2) Test (D5)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Watee High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (Iron Deposits Inundation Vi Water-Stainee Field Observatio Surface Water Pres	a for Depleted Ma a for Deplete	one required gery (B7) No No	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season I Oxidized Rhi (where Presence of Thin Muck S Other (Expla	ertebrates (B13) ulfide Odor (C1) Water Table (C2) izospheres on Liv not tilled) Reduced Iron (C urface (C7) uin in Remarks) hes):	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Po Oxidized Re (where Crayfish Bu Saturation of Geomorphic	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) hizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) t Position (D2) Test (D5)
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Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Watee High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (Iron Deposits Inundation Vi Water-Stainee Field Observatio Surface Water Pres	a for Depleted Ma a for Deplete	gery (B7) No No No	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season I Oxidized Rhi (where Presence of Thin Muck S Other (Expla	ertebrates (B13) ulfide Odor (C1) Water Table (C2) izospheres on Liv not tilled) Reduced Iron (C urface (C7) nin in Remarks) hes):	ring Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Pr Oxidized Ri (when Crayfish Bu Saturation Geomorphic FAC-neutra Frost Heave	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) alizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) a Position (D2) Test (D5) b Hummocks (D7) (LRR F)
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Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicate Surface Water High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (Iron Deposits Inundation Vi Water-Staine Field Observatio Surface Water Prese Saturation Present (includes capillary	a for Depleted Ma a for Deplete	gery (B7) No • No • No •	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season I Oxidized Rhi (where Presence of Thin Muck S Other (Expla	ertebrates (B13) ulfide Odor (C1) Water Table (C2) izospheres on Liv not tilled) Reduced Iron (C2 urface (C7) nin in Remarks) hes): hes):	ving Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Pe Oxidized Ri (when Crayfish Bu Saturation Geomorphic FAC-neutra Frost Heave	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) alizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) a Position (D2) Test (D5) b Hummocks (D7) (LRR F)
Depth (inches) Remarks: Soil meets criteria Hydrology Wetland Hydrolo Primary Indicato Surface Watee High Water T Saturation (A Water Marks Sediment Dep Drift deposits Algal Mat or (C Iron Deposits Inundation Vi Water-Stainee Field Observatio Surface Water Prese Water Table Prese Saturation Present (includes capillary Describe Record	a for Depleted Manager Indicators: ors (minimum of or (A1)) able (A2) 33) (B1) cosits (B2) (B3) Crust (B4) (B5) sible on Aerial Imager Indicators d Leaves (B9) ns: ent? Yes fringe) Yes ed Data (stream of	gery (B7) No No No gauge, moni	Salt Crust (B Aquatic Inve Hydrogen Su Dry Season I Oxidized Rhi (where Presence of Thin Muck S Other (Expla	ertebrates (B13) ulfide Odor (C1) Water Table (C2) izospheres on Liv not tilled) Reduced Iron (C urface (C7) nin in Remarks) hes): hes): hes):	ving Roots (C3)	Secondary Indic Surface Soi Sparsely Ve Drainage Pe Oxidized Ri (when Crayfish Bu Saturation Geomorphic FAC-neutra Frost Heave	ators (minimum of two required) Cracks (B6) getated Concave Surface (B8) atterns (B10) alizospheres on Living Roots (C3) a tilled) rrows (C8) Visible on Aerial Imagery (C9) a Position (D2) Test (D5) a Hummocks (D7) (LRR F)

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.	3. Evaluation Date: 7/11/18 4. Evaluator(s): Mark Traxler 5. Wetland/Site #(s): Forsyth NW - East											
6.	6. Wetland Location(s): Township 7 N, Range 39 E, Section 34; Township N, Range E, Section											
	Approximate Stationing or I	Roadposts: ~262.3 on US 12										
	Watershed: 14 - Middle Yellowstone County: _ Rosebud											
7.	Evaluating Agency: RESPE Purpose of Evaluation: ☐ Wetland potentially affe ☐ Mitigation wetlands; pro ☐ Other	ected by MDT project e-construction	9. Assessment Area (<i>I</i>	(visually estimated) 0.56 (measured, e.g. GPS) AA) Size (acre): mining AA) 0.56 (measure								
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							
L												
ŀ												
Ĺ												
1:0	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.

	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 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 F	PROP	OSED	THRE				NDANG	-			R 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)				s s	ck bo — —	x base	ed on	defin	itions ir	ı manu	al.								
ii	Rating: Based on the strong	gest hal	oitat c	hoser	in 14	IA(i) ab	ove, s	select t	he co	orres	onding	function	onal p	ooint a	nd ratii	ng.					
	Highest Habitat Level	Doc/F	rima	y (Sus/P	rimary	Do	c/Sec	onda	ary	Sus/Se	conda	ry	Doc/li	nciden	ıtal	Sus	/Incide	ntal	Non	е
	Functional Point/Rating				-															0L	
So	urces for documented use	(e.g. o	bserva	ations	, reco	rds): <u>U</u>	SF&V	VS T&E	E list	for R	osebud	Count	У								
14	B. HABITAT FOR PLANTS Do not include species lis				TED	S1, S2,	OR S	83 BY	THE	MON	TANA I	NATU	RAL	HERIT	AGE F	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																				
ii	Rating: Based on the strong	gest ha	bitat o	hose	n in 1	4A(i) ab	ove,	select	the c	orres	ponding	g functi	onal	point a	nd rati	ing.					
L	Highest Habitat Level	Doc/F	rima	у (Sus/P	rimary	Do	c/Sec	onda	ary	Sus/Se	conda	ry	Doc/li	nciden	ntal	Sus/	Incide	ntal	None	
	S1 Species Functional Point/Rating				-																
	S2 and S3 Species Functional Point/Rating	.9	9H		-																
So	U	(e.g. o	bserva	ations	, reco	rds): M	TNHF	SOC	repo	ort for	T7N R3	39E, dii	rect c	bserva	ation o	f Amm	nannia	a in 20	13.		
14	cources for documented use (e.g. observations, records): MTNHP SOC report for T7N R39E, direct observation of Ammannia in 2013. 4C. GENERAL WILDLIFE HABITAT RATING																				
i.	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 sure presence of extremely line interview with local biology Moderate: Based on any of observations of scattered common occurrence of well adequate adjacent uplant interview with local biology	t wildlife ch as someting he gist with the followidlife sod food so	e #s o cat, trabitat how wing e grousign susceptible.	r high acks, featu vledge [chec ps or ich as	spect spec	structur ot availa ne AA duals o , tracks,	es, ga able ir r rela	ime tra	ails, e urrou ew sp	etc. Inding	od) garea s during	⊠ fo ⊠ li □ s □ ii	ew or ttle to parso ntervi	r no wi o no wi e adjac iew wit	dlife o Idlife s ent up	bserva ign land f	ations ood s	ources	g peak	e of AA	
ii.	Wildlife Habitat Features: \	•		•			eck ar	iraorac	ate A	AA att	ributes	in matr	ix to	arrive :	at ratin	ıa. Stı	ructur	al dive	rsitv is	from #	#13.
Fo	r class cover to be considere	d even	ly dist	ribute	d, the	most a	nd le	ast pre	valer	nt ve ç	getated	classe	s mu	ıst be v	vithin 2	20% o	f each	n other	in ter	ns of tl	heir
	rcent composition of the AA (= seasonal/intermittent; T/E																ınial;				
	Structural Diversity (see #13)		orary	Српс		ligh	ub	ociii [o	00 111		ior iait			derate		omnoj.			L	.ow	
	Class Cover Distribution (all vegetated classes)		□ E	ven] Un	even			⊠E	ven			☐ Un	even			□ E	ven	
•	Duration of Surface	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
ŀ	Water in ≥ 10% of AA □ Low Disturbance at AA										+										
	(see #12i) Moderate Disturbance																				
	at AA (see #12i)										Н										
	☐ High Disturbance at AA (see #12i)																				
iji	Rating: Use the conclusion	ns from	i and	ii aho	ve an	d the m	atrix	below	to se	elect t	ne funct	ional n	oint :	and rat	ina						
Ï	Evidence of Wildlife Use	1 2.11									es Rati				·9'						
	(i)		Exc	eptic	nal		\boxtimes	High			<u></u>	derate	Э		☐ Lo	w					
	Substantial				-											-	1				
ŀ								 4M						-			-				

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.

							W	etlano	d/Site	#(s): <u>Fo</u>	orsyth	NW - I	East						
14D. 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, c	or is not	desire	ed fron	n a ma	anager	nent p	erspec	tive [s	uch as	fish
Assess this function if the precluded by perched cul					existin	g situa	ation is	s "cori	ectab	le" such	n that t	he AA	could	be us	ed by 1	fish [i.e	e., fish	use is	
Type of Fishery: Col	d Wate	er (CW	') 🗆 \	Narm	Water	(WW) Use	e the C	CW or	WW gu	ıideline	es in tl	ne mar	ual to	comple	ete the	matrix	ζ.	
i. Habitat Quality and Known	/ Susp	ected	Fish S	pecie	s in A	A: Us	se mat	rix to	select	the fun	nctiona	l point	and r	ating.					
Duration of Surface Water in AA	□ P	erman	ent / P	erenn	ial		□s	easo	nal / lı	ntermit	tent		□ T	empo	rary / I	Ephen	neral		ı
Aquatic Hiding / Resting /									uate	ıate Poor		i							
Thermal Cover: optimal / suboptimal	0	s	0	s	0	s	0	s	0	S	0	s	0	S	0	s	0	s	ı
FWP Tier I fish species																			ı
FWP Tier II or Native Game fish species																			i
FWP Tier III or Introduced Game fish																			ı
FWP Non-Game Tier IV or No fish species																			ı
Sources used for identifying f	ish sp	p. pot	entially	/ foun	d in A	A:													
ii. Modified Rating: NOTE: Modeling is fish use of the AA significated in the MDEQ list of waterbodies in new support, or do aquatic nuisance	ntly red ed of Ti	duced i	by a cu levelopi	lvert, d ment v	dike, o vith lis	r othe ted "P	r man- Probabi	-made le Imp	struc aired	Uses" i	ncludir	ng cold	d or w	arm wa	ater fis	hery o	r aqua	tic life	
b) Does the AA contain a docun native fish or introduced game fi	nented	spawi	ning are	ea or c	ther c	- ritical i	habita	t featu	ıre (i.e	., sanc									
iii. Final Score and Rating: _	Comm	nents:		-															
14E. FLOOD ATTENUATION Applies only to wetlands t If wetlands in AA are not to		subje		oding	via in	-chanı					d proc	eed to	14F.						
Entrenchment Ratio (ER) Estil Flood-prone width = estimated h																		of the s	stream.
/ / flood prone width / bankfull widtl	= _ h = ent	renchr	ment ra	tio		2 x F	Bankfu [°]	ll Dep	th	Ban	ıkfull D	epth			(Avsiv)	Flo Bankfi	•	ne Wid	th
Slightly Entr ER ≥ 2		d					ly Enti 1.41 –		ed					renche 1.0 –					
C stream type D stream		E st	ream ty	ре			eam ty			A stre	am typ	oe		ream ty		G st	ream t	уре	
W.A.	7			: -		7							£		==	_	·		

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 Ent	renched		Entrenche	d
(Rosgen 1994, 1996)	C, D	, E stream t	ypes	Е	3 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 - East

14	4F. SHORT AND LONG TERM SURFACE WATER STORAGE
	Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.
	If no wetlands in the AA are subject to flooding or ponding, 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	l to 5 ac	re feet	⊠≤	≤1 acre f	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
	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 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 A 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 or 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	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 14)
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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	☐ Temporary / Ephemeral							
□ ≥ 65%									
⊠ 35-64%		.6M							
☐ < 35%									

Comments: AA with seasonal/ephemeral water. Vegetation transitioning from annuals to perennial rhizomatous grasses and bunchgrasses, along with natural Populus deltoides recruitment.

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											
В	B 🔲 High		М	oderate	e □ Low		☐ High		☐ 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																			

15. GENERAL SITE NOTES: _____

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

			vveliand	"Oile " (3). <u>I Olayul INVV</u>	<u>- Lasi</u>				
14I. PRODUCTION EXPORT / FOOD CH	IAIN SU	IPPORT (contin	nued)							
iii. Modified Rating: Note: Modified score	e canno	ot exceed 1.0 o	r be less than	0.1.						
Vegetated Upland Buffer: Area with mowing or clearing (unless for weed of a sthere an average ≥ 50-foot wide veg	ontrol).						-			
iv. Final Score and Rating: $\underline{.3L}$ Comm	ents:									
14J. GROUNDWATER DISCHARGE / R Check the appropriate indicators in										
i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known wetland. Vegetation growing during do Wetland occurs at the toe of Seeps are present at the wetland contains an outlet, but Shallow water table and the selection of	ormant s a natura land edg ng droug ut no inl site is sa	eason/drought il slope. ge. ght periods. let. aturated to the s	surface.	☐ Peri ☐ Wet ☐ Stre	rge Indicators meable substr tland contains am is a knowr er:	ate present wi inlet but no ou	ıtlet.	, , ,	o ,	
iii. Rating: Use the information from i an	d ii abov								=	
		Duration of S	Saturation at	AA Wetla	ands <u>FROM G</u>	ROUNDWAT	ER DISC	<i>HARGE</i> or		
Cuitouio		<u><i>WITH W</i></u> □ P/P	<u>'ATER THAT I</u> ™ c		<u>ARGING THE</u> □ T	GROUNDWA				
Criteria Groundwater Discharge or Rech	orgo.	<u> </u>	<u>⊠</u> S		<u> </u>		☐ No	ne	4	
☐ Insufficient Data/Information	arge		.7101						4	
Comments: Ponding was observed on sit	a in 201	1 but not obse	nyed in 2015	2016 20	17 or 2018				1	
14K. UNIQUENESS i. Rating: Working from top to bottom, us										
Replacement Potential	AA co spring forest	ontains fen, bo gs or mature (2 ed wetland Of ciation listed a	g, warm >80 yr-old) ⋜ plant	AA doo cited radiversi contail	es not contain are types ANI ity (#13) is hig ns plant asso as "S2" by the	Structural gh OR ciation				
Estimated Relative Abundance (#11)		e ☐ Common	☐ Abundant		□ Common		□ Rare	□ Common		
☐ Low Disturbance at AA (#12i)										
Moderate Disturbance at AA (#12i)									.2L	
☐ High Disturbance at AA (#12i)										
Comments: AA resembles a roadside dite 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 iii. Rating: Use the matrix below to select	ENTIAL a recrea itional c A:	ational or educ or educational Educational/Sci Other:	site?	ınity. 3 , go to ii	. 🛛 NO , che	ck the NA box	ζ.	ımptive recrea	ational	
		I Recreational		al Area			Known	Potential	ī	
Public ownership or public easemer					n required)					
Private ownership with general public access (no permission required)										
Private or public ownership without					sion for publi	c access				
Comments: AA small, adjacent to highwa								•		

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	mod 0.60	1.00	0.34	*
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	4.4	9	2.46 Total	Functional Units
Percent of Possibl	e Score 49% (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 <u>wetland</u> component < 1 acre (do <u>not</u> include upland vegetated buffer); and
	Percent of possible score < 35% (round to nearest whole #).
	The stability of possible seeds and the stability through the stability.
ı	
	OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.
_	The interpretation of the interpretation of the appropriate category based on the chiefla outlined above.

APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Forsyth – Northwest Rosebud County, Montana



Photo Point 1; Location: NE Corner of SE End; Bearing 270 degrees; Year 2015



Photo Point 1; Location: NE Corner of SE End; Bearing 270 degrees; Year 2016



Photo Point 1; Location: NE Corner of SE End; Bearing 270 degrees; Year 2017



Photo Point 1; Location: NE Corner of SE End; Bearing 270 degrees; Year 2018



Photo Point 2; Location: SW Corner of SE End – Shows dike breach; Bearing 350 degrees; Year 2015



Photo Point 2; Location: SW Corner of SE End – Shows dike breach; Bearing 350 degrees; Year 2016



Photo Point 2; Location: SW Corner of SE End - Shows dike repair; Bearing 350 degrees; Year 2017



Photo Point 2; Location: SW Corner of SE End – Shows dike repair; Bearing 350 degrees; Year 2018



Photo Point 3; Location: NE side near middle of site; Bearing 230 degrees; Year 2015



Photo Point 3; Location: NE side near middle of site; Bearing 230 degrees; Year 2016



Photo Point 3; Location: NE side near middle of site; Bearing 230 degrees; Year 2017



Photo Point 3; Location: NE side near middle of site; Bearing 230 degrees; Year 2018



Photo Point 4; Location: NE corner of NW end; Bearing 210 degrees; Year 2015



Photo Point 4; Location: NE corner of NW end; Bearing 210 degrees; Year 2016



Photo Point 4; Location: NE corner of NW end; Bearing 210 degrees; Year 2017



Photo Point 4; Location: NE corner of NW end; Bearing 210 degrees; Year 2018



Photo Point 5; Location: SW side near middle of site; Bearing 45 degrees; Year 2015



Photo Point 5; Location: SW side near middle of site; Bearing 45 degrees; Year 2016

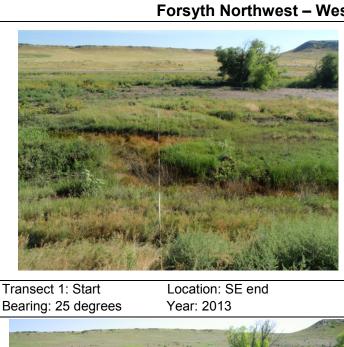


Photo Point 5; Location: SW side near middle of site; Bearing 45 degrees; Year 2017



Photo Point 5; Location: SW side near middle of site; Bearing 45 degrees; Year 2018





Bearing: 25 degrees



Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2014



Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2015



Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2016



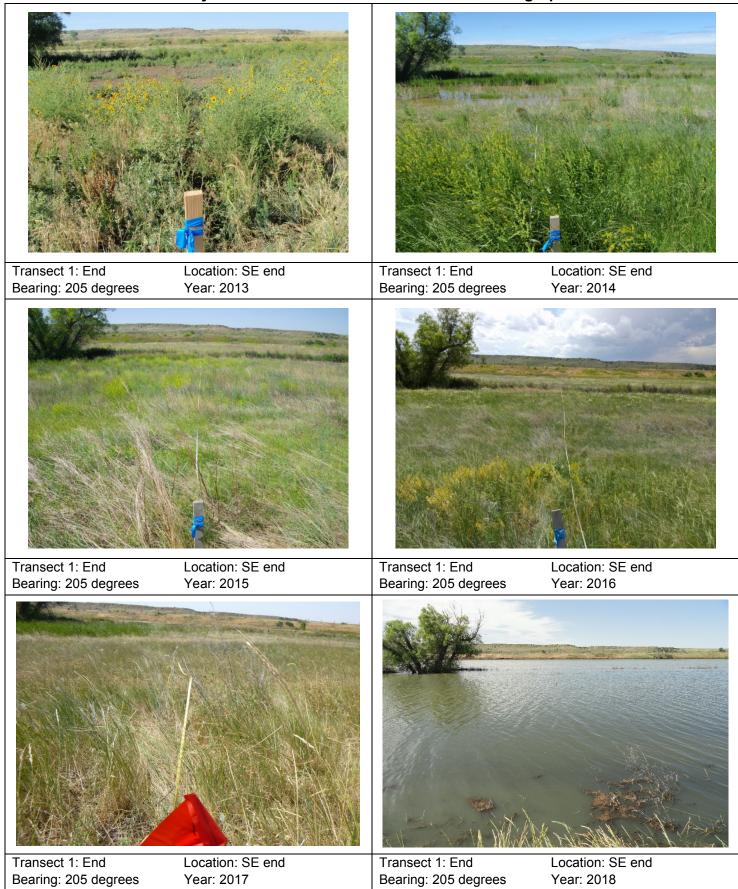
Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2017



Transect 1: Start Bearing: 25 degrees

Location: SE end Year: 2018





Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2013



Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2014



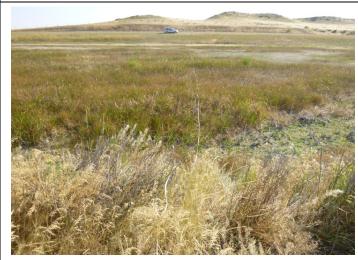
Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2015



Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2016



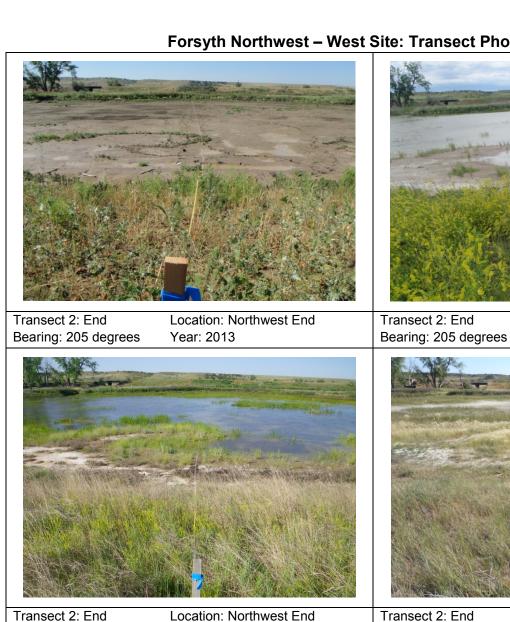
Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2017



Transect 2: Start Bearing: 25 degrees

Location: NW End Year: 2018



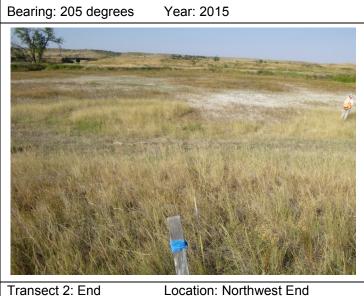


Location: Northwest End

Location: Northwest End

Year: 2016

Year: 2014



Year: 2017

Bearing: 205 degrees



Bearing: 205 degrees





Location: NW part of site



Data Point: DP-1U Year: 2018

Location: NW part of site

Forsyth Northwest - Middle: Photo Point Photographs



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2013



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2014



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2015



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2016



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End Year: 2017



Photo Point: 1 Bearing: 120 degrees

Location: Northwest End

Year: 2018

Forsyth Northwest - Middle: Photo Point Photographs



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end Year: 2013



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end Year: 2014



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end Year: 2015



Bearing: 300 degrees

Location: Southeast end Year: 2016



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end Year: 2017



Photo Point: 2 Bearing: 300 degrees

Location: Southeast end

Year: 2018

Forsyth Northwest - Middle: Transect Photographs



Transect 1: Start Bearing: 205 degrees



Transect 1: Start Bearing: 205 degrees

Location: Middle of Site Year: 2014



Transect 1: Start Bearing: 205 degrees



Location: Middle of Site Year: 2015

Location: Middle of Site

Year: 2013



Transect 1: Start Bearing: 205 degrees

Location: Middle of Site Year: 2016



Transect 1: Start Bearing: 205 degrees

Location: Middle of Site Year: 2017



Transect 1: Start Bearing: 205 degrees

Location: Middle of Site

Year: 2018

Forsyth Northwest - Middle: Transect Photographs



Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2013



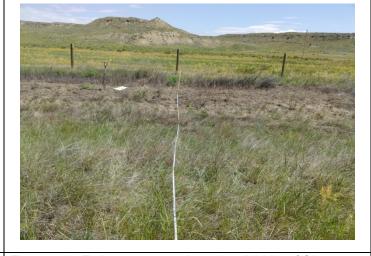
Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2014



Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2015



Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2016



Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2017



Transect 1: End Bearing: 25 degrees

Location: Middle of Site Year: 2018

Forsyth Northwest – Middle: Data Point Photographs



Data Point: DP-1W Year: 2018 Location: Middle of site

Data Point: DP-1U Year: 2018

Location: Middle of site

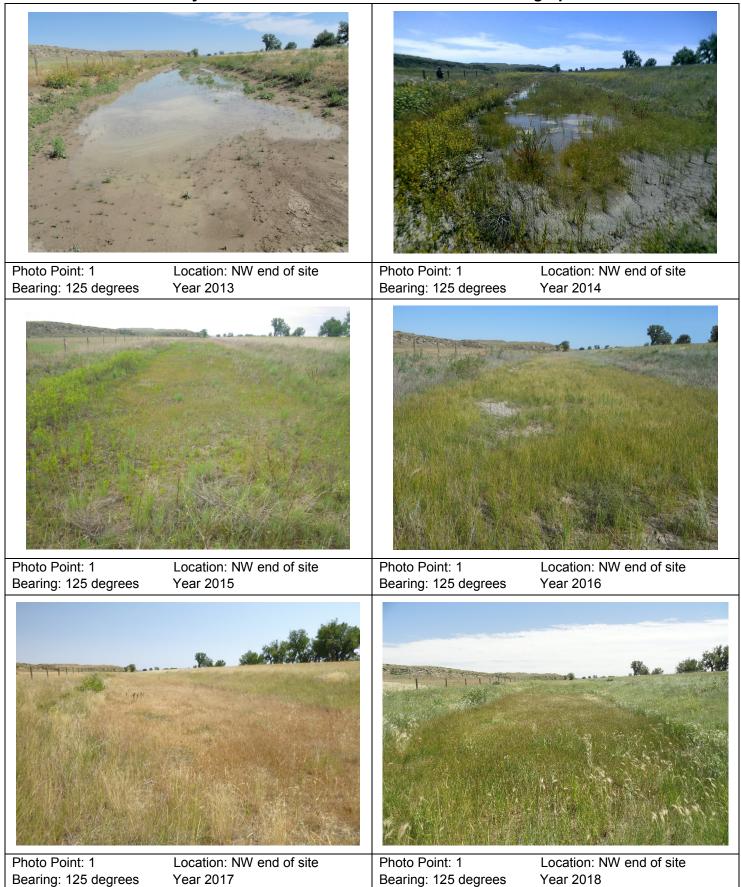




Photo Point 2; Location: Near Center of Site; Bearing 210 degrees; Year 2015



Photo Point 2; Location: Near Center of Site; Bearing 210 degrees; Year 2016



Photo Point 2; Location: Near Center of Site; Bearing 210 degrees; Year 2017



Photo Point 2; Location: Near Center of Site; Bearing 210 degrees; Year 2018

Forsyth Northwest - East Site: Photo Point Photographs



Photo Point: 3 Bearing: 305 degrees

Location: Southeast end of site Year 2013



Photo Point: 3 Bearing: 305 degrees

Location: Southeast end of site Year 2014



Photo Point: 3 Bearing: 305 degrees

Location: Southeast end of site Year 2015



Photo Point: 3 Bearing: 305 degrees

Location: Southeast end of site Year 2016



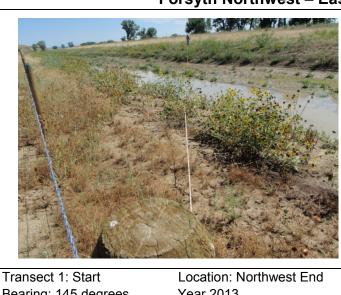
Photo Point: 3 Bearing: 305 degrees

Location: Southeast end of site Year 2017



Photo Point: 3 Bearing: 305 degrees

Location: Southeast end of site Year 2018



Bearing: 145 degrees

Year 2013



Transect 1: Start Bearing: 145 degrees

Location: Northwest End Year 2014



Transect 1: Start Bearing: 145 degrees

Location: Northwest End Year 2015



Transect 1: Start Bearing: 145 degrees

Location: Northwest End Year 2016



Transect 1: Start Bearing: 145 degrees

Location: Northwest End Year 2017



Transect 1: Start Bearing: 145 degrees

Location: Northwest End Year 2018



Transect 1: End Bearing: 325 degrees

Location: Northwest End Year 2013



Transect 1: End Bearing: 325 degrees

Location: Northwest End Year 2014



Transect 1: End Bearing: 325 degrees

Location: Northwest End Year 2015



Transect 1: End Bearing: 325 degrees

Location: Northwest End Year 2016



Transect 1: End Bearing: 325 degrees

Location: Northwest End Year 2017



Transect 1: End Bearing: 325 degrees

Location: Northwest End Year 2018



Transect 2: Start Bearing: 280 degrees

Location: Southeast End Year 2013



Transect 2: Start Bearing: 280 degrees

Location: Southeast End Year 2014



Transect 2: Start Bearing: 280 degrees

Location: Southeast End Year 2015



Transect 2: Start Bearing: 280 degrees

Location: Southeast End Year 2016



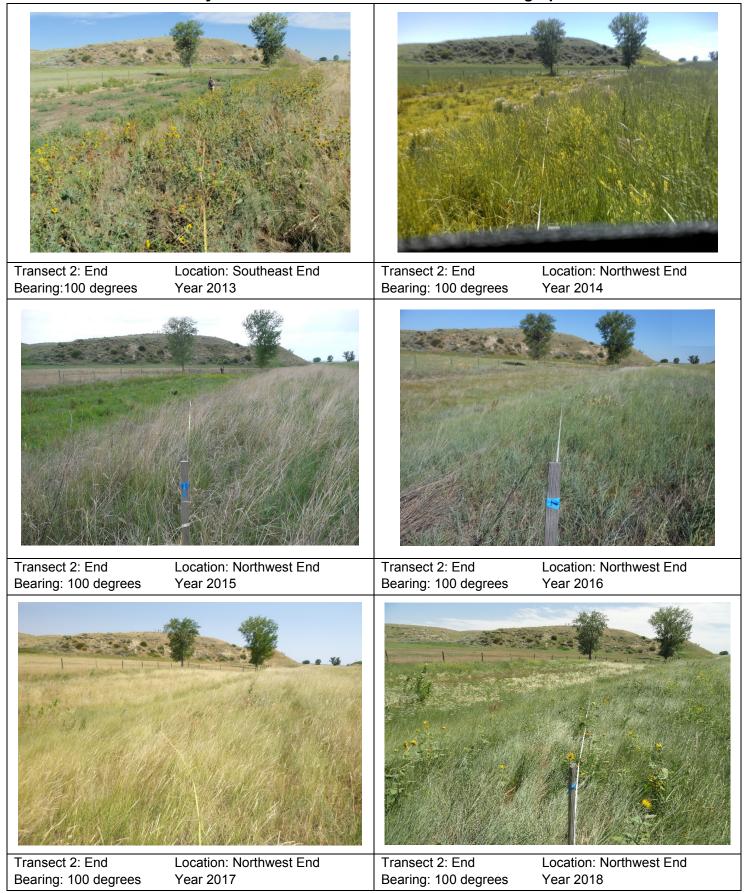
Transect 2: Start Bearing: 280 degrees

Location: Southeast End Year 2017



Transect 2: Start Bearing: 280 degrees

Location: Southeast End Year 2018



Forsyth Northwest - East Site: Data Point Photographs



Location: Central part of site Data Point: DP-2U Year: 2018

APPENDIX D PROJECT PLAN SHEETS

MDT Wetland Mitigation Monitoring Forsyth – Northwest Rosebud County, Montana

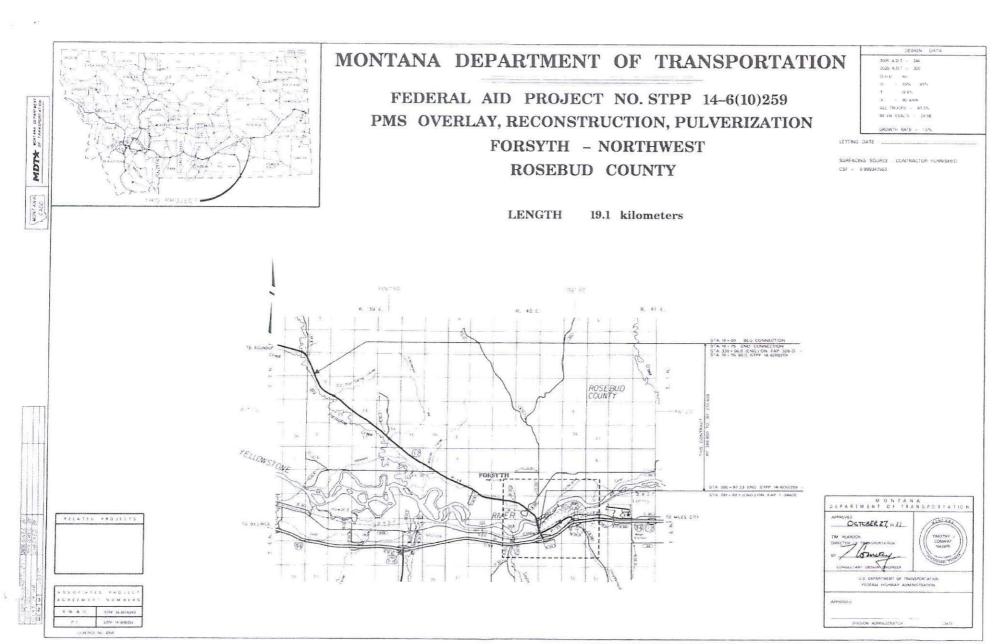


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0+00	36+00	0.6	RI		
1+23	84~70	0.2	LT		
R + E()	71+07	9.2	LT.		
101	Lawrence and	15			

