KINDSFATER MITIGATION SITE

Project Overview

Watershed: Watershed #13 – Upper Yellowstone River Basin

Monitoring Year: 2019

Years Monitored: 7th year of monitoring

Corps Permit Number: NWO-2007-00824-MTB

Monitoring Conducted By: RESPEC/HDR/TREC for MDT

Dates Monitoring Was Conducted: July 22, 2019

Purpose of the Approved Project:

The site is intended to provide 32.7 acres of wetland mitigation credits to assist Montana Department of Transportation (MDT) in meeting compensatory mitigation requirements for proposed construction projects in Watershed #13 – Upper Yellowstone. The objectives of this project included creating, restoring, enhancing, and preserving wetland habitat within the historic Kindsfater gravel pit. Construction included excavating 14 wetland cells to shallow groundwater elevation that range in size from 0.24 to 1.39 acres.

Site Location:

Latitude: 45.693478 Longitude: -108.693517

County: Yellowstone Nearest Town: Laurel, MT

Map Included: Yes

Mitigation Site Construction Started: 2012 Construction Ended: 2012

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

Activity: Weed Spraying Date: July 6, 2019 Specific recommendations for any additional corrective

actions: Weed treatment will continue in 2020.

Anticipated Wetland Credit Acres: 32.70

Wetland Credit Acres Generated to Date: 19.50

Previous Monitoring Reports:

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

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

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

Performance Standards: A summary of performance standards established for the Kindsfater site and whether or not they are being achieved is provided in Table 1.

Table 1. Summary of Performance Standards

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Characteristics	The three parameter criteria for hydrology, vegetation, and soils are met as outlined in the 1987 Wetland Manual and 2010 Regional Supplement.	Υ	Areas identified as wetland habitat within the mitigation site meet the three parameter criteria.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Hydrology	Soil saturation present for at least 12.5 percent of the growing season.	Υ	Areas identified as wetland habitat within the mitigation site exhibit soil saturation for a minimum 12.5 percent of the growing season.
Hydric Soil	Hydric soil conditions present or appear to be forming.	Υ	The constructed wetland complex exhibits weak hydric soil development including faint redoximorphic concentrations observed within several of the excavated depressions. Preexisting hydric soil characteristics are present in several areas identified as wetland before project construction.
	Soil is sufficiently stable to prevent erosion.	Υ	Disturbed soil is stable and does not exhibit signs of erosion.
	Soil is able to support plant cover.	Υ	Plant cover has continued to develop across disturbed soils.
	Achieved when wetlands delineated as hydrophytic using technical guidelines.	Υ	Areas identified as wetland habitat within the mitigation site support a prevalence of hydrophytic vegetation (OBL, FACW, and FAC).
Hydrophytic	Noxious weeds do not exceed 5 percent cover.	Υ	Although several noxious weed infestations have been mapped across this site, these infestations are generally located outside of excavated wetlands. Overall, the estimated noxious weed cover within delineated wetlands is less than 5 percent.
Vegetation	Hydrophytic vegetation success will include achieving a minimum overall vegetation cover of 80 percent in created wetland areas within 5 years following site construction.	Υ	The majority of created wetlands exhibited 80 percent hydrophytic vegetation cover during the 2019 monitoring event. Wetlands that do not exhibit vegetation cover were intentionally designed to provide rocky shorebird habitat and did not receive topsoil treatment following construction. All wetlands that were designed to provide 80 percent vegetative cover are currently achieving that performance standard.
Woody Plants	Plantings will be considered successful where they exceed 50 percent survival after 5 years.	N	Approximately 12 percent of the woody plantings observed were alive in 2019, which does not meet the 50 percent survival criteria. However, several wetland cells exhibit at least 45 percent cover by volunteer woody species that are expected to continue expanding across the site. This cover values of volunteer woody species has been included in the success criteria determination for this performance criteria and almost meets the 50 percent.
Herbaceous Plants	At the conclusion of the monitoring period, ocular coverage of desirable hydrophytic vegetation will be at least 80 percent.	Υ	The majority of created wetlands exhibited 80 percent hydrophytic vegetation cover during the 2019 monitoring event. Wetlands that do not exhibit vegetation cover were intentionally designed to provide rocky shorebird habitat and did not receive topsoil treatment following construction. All wetlands that were designed to provide 80 percent hydrophytic vegetative cover are currently achieving that performance standard.
Open-Water Areas	Open water that is established within the designated wetland cells will be considered successful and creditable.	Υ	Seasonal open water was present within two of the three wetland enhancement cells (Cells 8 and 12). Wetland Cell 10 lacked open water in 2019. Overall, water depths ranged from 2 to 5 inches deep. These areas were generally vegetated with various herbaceous and woody hydrophytic species.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
	Success will be achieved when noxious weeds do not exceed 5 percent cover within the buffer areas on site.	Υ	Noxious weed infestations, including field bindweed, leafy spurge, gypsy-flower, spotted knapweed, and Canada thistle, have been mapped within the site but do not exceed 5 percent. MDT will continue to implement weed-control measures to maintain this criteria.
Upland Buffer	Any area disturbed within creditable buffer zones must have at least 50 percent aerial cover of non-weed species by the end of the monitoring period.	Υ	Upland buffers surround wetland areas within the site exhibited greater than 50 percent aerial cover of non-weed species.
Weed Control	Success will be achieved where < 5 percent absolute cover of noxious weed species occurs across the site.	Υ	The estimated coverage of noxious weeds within the constructed wetlands is below 5 percent; state-listed noxious weed species across the entire site has been estimated at less than 5 percent absolute cover in 2019.
Fencing	Install wildlife-friendly fencing along the easement boundaries.	Υ	Wildlife-friendly fencing has been installed around the easement boundaries and is in good condition.
Monitoring	Monitor the site for a minimum of 5 years or longer as determined by the USACE.	Υ	Comprehensive site monitoring has been ongoing for 7 years.

Summary Data

Wetland Delineation – The total wetland acreage delineated in 2019 (including preexisting wetland areas) was 33.3 acres, which is a slight increase from the 2018 acreage (32.4 acres). The delineation confirmed 17.4 acres in preservation areas, 8.3 acres in the restoration areas (reestablishment and rehabilitation), 2.9 acres in the enhancement area, and 4.7 acres of created wetland in the excavated cells (Table 2). Uplands accounted for 82.4 acres of the mitigation site. USACE wetland determination date forms [USACE, 2010] are provided in Appendix B.

Table 2. Wetland Acres Delineated From 2014 Through 2019 at the Kindsfater Site

Habitat Type	2014 Acreage	2015 Acreage	2016 Acreage	2017 Acreage	2018 Acreage	2019 Acreage
Preservation	21.3	21.3	20.3	20.5	17.6	17.4
Reestablishment (Restoration)	7.9	7.9	7.8	6.8	6.1	7.3
Rehabilitation (Restoration)	0.9	0.9	0.9	1.0	1.0	1.0
Enhancement	3.0	3.0	3.4	3.0	3.0	2.9
Creation	1.8	1.8	2.0	2.2	4.7	4.7
Total Wetland Habitat	34.9	34.9	34.4	33.4	32.4	33.3

Vegetation – A total of 150 plant species were identified on the site from 2013 through 2019, including 9 new species (4 wetland and 5 upland) in 2019 (see the plant list in Appendix B). Vegetation plant communities were identified by plant composition and dominance. The following vegetation community types were identified in 2019:

- Wetland Type 2 Eleocharis palustris/Schoenoplectus pungens
- Wetland Type 3 *Alopecurus arundinaceus/Poa palustris*

- Wetland Type 5 Typha latifolia
- Wetland Type 8 Populus deltoides
- Wetland Type 9 Salix exigua
- Wetland Type 10 *Poa palustris*
- Wetland Type 11 Phalaris arundinacea
- Wetland Type 16 Juncus spp./Carex spp.
- Upland Type 4 Elaeagnus angustifolia
- Upland Type 6 *Elymus trachycaulus/Bromus spp.*
- Upland Type 7 Bromus tectorum/Agropyron cristatum
- Upland Type 12 Alopecurus arundinaceus/Poa pratensis
- Upland Type 14 *Elymus spp./Bromus spp.*
- Upland Type 15 Bromus spp./Nassella viridula
- Upland Type 17 Bromus spp./Poa pratensis.

The community composition for each community type is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and the community boundaries are shown on Figure A-3 (Appendix A).

Vegetation cover was measured along three transects in 2019 (Figure A-2, Appendix A). Details of each transect are provided in the Wetland Mitigation Site Monitoring form in Appendix B. Photographs of the transect end points are provided in Appendix C. Table 3 summarizes the data for T-1. T-1 is 300 feet long and intersected upland community Type 15 and wetland community Types 8 and 9; 55 percent of the transect crossed wetland habitat, which is a 6 percent increase since 2018. Total vegetative cover along this transect was 84 percent in 2019. The number of upland species that were documented along the transect increased slightly while the number of wetland species remained static. Site conditions and timing of the survey might explain the slight increase in upland species observed.

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

Monitoring Year	2016	2017	2018	2019
Transect Length (feet)	300	300	300	300
Vegetation Community Transitions Along Transect	4	4	4	4
Vegetation Communities Along Transect	4	4	5	3
Hydrophytic Vegetation Communities Along Transect	2	2	2	2
Total Vegetative Species	40	38	35	40
Total Hydrophytic Species	14	13	12	12
Total Upland Species	26	25	23	28
Estimated % Total Vegetative Cover	75	75	85	84
Estimated % Unvegetated	25	25	15	16
% Transect Length Comprising Hydrophytic Vegetation Communities	40.3	40.3	49.3	55
% Transect Length Comprising Upland Vegetation Communities	59	59.7	50.7	45
% Transect Length Comprising Unvegetated Open Water	0	0	0	0
% Transect Length Comprising of Mudflat	0	0	0	0

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Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 4. T-2 is 388 feet long and intersects wetland community Types 2 and 5; 100 percent of the transect crossed wetland habitat in 2019, which has remained constant since monitoring began in 2013. Total vegetative cover along this transect was 88 percent in 2019.

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

Monitoring Year	2016	2017	2018	2019
Transect Length (feet)	388	388	388	388
Vegetation Community Transitions Along Transect	2	2	2	2
Vegetation Communities Along Transect	2	2	2	3
Hydrophytic Vegetation Communities Along Transect	2	2	2	2
Total Vegetative Species	35	39	26	27
Total Hydrophytic Species	18	23	20	20
Total Upland Species	17	16	6	7
Estimated % Total Vegetative Cover	60	65	75	88
Estimated % Unvegetated	40	35	25	12
% Transect Length Comprising Hydrophytic Vegetation Communities	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0
% Transect Length Comprising Unvegetated Open Water	0	0	0	0
% Transect Length Comprising of Mudflat	0	0	0	0

Data collected on T-3 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 5. T-3 is 292 feet long and intersected upland community Types 6 and 12 and wetland community Type 5; 92 percent of the transect crossed wetland habitat in 2019, which is unchanged from 2018. Total vegetative cover along this transect was 88 percent in 2019.

Table 5. Data Summary for T-3 From 2016 Through 2019 at the Kindsfater Site

Monitoring Year	2016	2017	2018	2019
Transect Length (feet)	292	292	292	292
Vegetation Community Transitions Along Transect	1	1	1	2
Vegetation Communities Along Transect	2	2	2	3
Hydrophytic Vegetation Communities Along Transect	1	1	1	2
Total Vegetative Species	28	31	23	24
Total Hydrophytic Species	15	19	11	15
Total Upland Species	13	12	12	9
Estimated % Total Vegetative Cover	70	75	85	88
Estimated % Unvegetated	30	25	15	12
% Transect Length Comprising Hydrophytic Vegetation Communities	89.7	89.7	91.8	91.8
% Transect Length Comprising Upland Vegetation Communities	10.3	10.3	8.2	8.2
% Transect Length Comprising Unvegetated Open Water	0	0	0	0
% Transect Length Comprising of Mudflat	0	0	0	0

Priority 2B noxious weeds that were identified within the Kindsfater mitigation site in 2019 included spotted knapweed (*Centaurea stoebe*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), field bindweed (*Convolvulus arvensis*), and gypsy-flower (*Cynoglossum officinale*). Infestation areas were mapped in 2019 and are shown on Figure A-3 in Appendix A. MDT has an ongoing weed-control program for their mitigation sites that includes conducting an annual assessment of weeds that are identified at each location and containing and controlling the identified populations. MDT completed noxious weed spraying at the Kindsfater site on July 6, 2019. Performance standards for noxious weeds across the site are currently being met.

A few thousand cuttings and containerized materials were planted in approximately 27 clusters (Figure A-2, Appendix A) around the Kindsfater site. The woody planting zones were generally located around the excavated wetland cells. Each individual cluster was monitored in 2019 with the number of live plants counted and recorded by species. Approximately 12 percent of the observed plantings were alive during the 2019 evaluations, which is a slight increase from 2018 (11 percent) and is likely caused by narrow-leaf willow and eastern cottonwood root sprouts or plant regrowth from the base. Low survival is likely caused by a lack of sufficient moisture. A few additional *Juniperus scopulorum*, *Rosa woodsii*, and *Shepherdia argentea* young plants were observed during the July 2019 monitoring. The planted and surviving species are listed on the Wetland Mitigation Site Monitoring form (Appendix B).

Hydrology – The hydrology for the site is supplied from multiple sources, including a shallow seasonal groundwater table, direct precipitation, and surface runoff. During the July 2019 monitoring, all areas that had been defined as wetlands across the site were saturated or exhibited signs of periodic saturation within 12 inches (1 foot) of the ground. Shallow surface water documented in some of the cells ranged in depth from 1-4 inches. Inundation was present in many of these cells including Cells 8, 11, 12, 13 and a small area within 4 and 14. Constructed Cells 3, 4, 5, 6, 7, 8, 13, and 14 represented isolated wetland depressions surrounded by upland habitat. The remaining constructed cells were situated within a contiguous wetland mosaic with frequent surface drainages between cells. Shallow groundwater flows through the cells that were constructed along the upper terrace then discharges into the natural slope wetlands to recharge the depressional wetlands along the lower terrace.

Long-term groundwater monitoring conducted by the US Geological Survey (USGS) at the Kindsfater site indicates that groundwater levels steadily declined through 2015 likely from prolonged drought conditions in the region) and have since steadily increased because of higher-than-average precipitation in the region over the last 4 years. Groundwater elevations are likely also influenced by active gravel mining operations directly north of the Kindsfater wetland site.

Photographs – Photographs were taken at photo points 1–12 (PP1 to PP12), transect endpoints, and data points and are provided in Appendix C with comparisons between 2019 and the first year of monitoring. Please refer to previous years' monitoring reports for all previous annual photographs (https://www.mdt.mt.gov/publications/brochures/wetland_mitigation.shtml).

Soils – The Yellowstone County Soil Survey [US Department of Agriculture, 2016] indicates that five soil series were mapped within the monitoring area and include the Bew silty clay loam, Shoreu gravelly loam, Wanetta clay loam, Larim gravelly loam, and alluvial land (wet). Soil test pits were excavated at eight locations across the site (Figure A-2, Appendix A). DP-1W, DP-2W, DP-3W, and DP-4W are located in areas that exhibited or are developing hydric soil characteristics. The soil profile at DP-1W located in wetland Type 16 – *Juncus spp.* revealed a grayish-brown (10YR 5/2) sand with prominent redox concentrations below 4 inches. No hydric soil indicators were observed for DP-1U.

The soils at DP-2W included a grayish-brown (10YR 5/2) clay loam with small cobbles located within community Type 8 – *Populus deltoides*. This soil met the hydric soil criteria for hydrogen sulfide odor (A4) in 2018 but odor was not detected in 2019. These soils are still developing hydric indicators following construction. DP-2U, which is located upslope from DP-2W, exhibited a brown (10YR 4/3) silt loam and did not meet the criteria for any hydric soil indicators.

The soil profile at DP-3W, which was a new data point in 2018, revealed a 10-inch A Horizon of 10YR4/2 loam over a 10-inch layer of 10YR 3/2 clay loam with 10 percent 10YR 5/8, redoximorphic concentrations. The soil met the criteria for depleted matrix (F3) and classification as a hydric soil. DP-3U, which is located upslope from DP-3W, exhibited a dark grayish-brown (10YR 4/2) clay loam and did not meet the criteria for any hydric soil indicators.

The soil profile at DP-3W, which is located in wetland Type 11 - Phalaris arundinacea, revealed a dark gray (10YR 4/1) silt loam that lacked hydric soil indicators because of its location in a constructed wetland where soils may be too young to have formed hydric indicators. The soil profile at DP-4W, which is located in wetland Type 10 - Poa palustris, revealed a grayish-brown (10YR 5/2) silty clay loam and the faint redox concentrations noted in 2018 were not observed in 2019. This area has a modified soil profile and hydric soil indicators are developing.

Functional Assessment – The 2019 results of the functional assessments are summarized in the Table 6. A completed Montana Wetland Assessment Method (MWAM) form [Berglund and McEldowney, 2008] for the Kindsfater Site is provided in Appendix B. Overall, the existing and created wetlands rate as a Category III wetlands and the site has generated 172.54 Functional Units.

Table 6. Montana Wetland Assessment Method Summary for the Kindsfater Site

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2019 AA1 (Existing Wetlands)	2019 AA2 (Created Wetlands)
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	Low (0)	Low (0)
Montana Natural Heritage Program Species (MTNHP) Habitat	High (0.9)	High (0.9)
General Wildlife Habitat	Mod (0.5)	Mod (0.5)
General Fish/Aquatic Habitat	N/A	N/A
Flood Attenuation	N/A	N/A
Short- and Long-Term, Surface-Water Storage	Mod (0.6)	High (0.9)
Sediment/Nutrient/Toxicant Removal	High (1.0)	High (1.0)
Sediment/Shoreline Stabilization	High (0.9)	High (0.9)
Production Export/Food Chain Support	High (0.8)	High (0.8)
Groundwater Discharge/Recharge	Mod (0.7)	Mod (0.7)
Uniqueness	Low (0.3)	Low (0.3)
Recreation/Education Potential (bonus points)	Low (0.05)	Low (0.05)
Actual Points/Possible Points	5.75/9	6.05/9
% of Possible Score Achieved	63.9%	67%
Overall Category	III	II
Total Acreage of Assessed Wetlands Within Site Boundaries	14.96	26.42
Functional Units (acreage × actual points)	86.02	159.85

Wildlife — Twenty bird species were identified in 2019 across the site. The two bluebird (*Sialia spp.*) boxes installed at the site were in trees that have fallen over and the boxes are not being used. In addition to the bird species, very small frogs of unknown species were seen in wetlands across the site and deer tracks were also noted. MDT personnel who visited the Kindsfater site in June 2019 observed chorus frogs (*Psuedacris maculata*) and juvenile spadefoot toads (*Spea bombifrons*) within the project wetlands. In September 2019, the Yellowstone Academy released 50 ring-necked pheasants (*Phasianus colchicus*) that were raised by students as a community project into the Kindsfater wetland area.

Credit Summary — Table 7 summarizes the current estimated wetland credits based on the USACE-approved credit ratios [USACE, 2005] and the wetland delineation that was completed in July 2019. A total of 33.3 acres of wetland habitat were delineated at the Kindsfater site in 2019, including 4.7 acres of creation, 7.3 acres of reestablishment, 1.0 acre of rehabilitation, 2.9 acres of enhancement, and 17.4 acres of wetland preservation. A total of 40.6 acres, including 7.3 acres of upland buffer, were used to calculate the mitigation credited acres. After applying the USACE-approved ratios to these values, a total of 19.5 acres of mitigation credits have been estimated in 2019, which is below the targeted 32.7 acres that were anticipated at this site. Although 2019 represents the seventh year of monitoring, attaining the full target value of 32.7 credit acres may prove difficult without an increase of groundwater or supplemental water into the mitigation area.

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Table 7. Wetland Mitigation Credits Estimated for the Kindsfater Ranch Site (2017–2019)

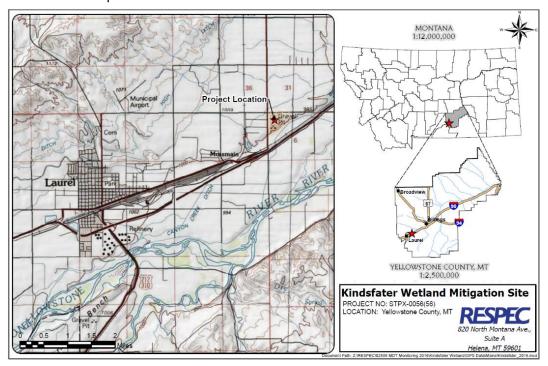
Compensatory Mitigation Type	Mitigation Area Description	Wetland Type ^(a)	Anticipated Mitigation Surface Area (acres)	USACE- Approved Mitigation Ratios	Anticipated Mitigation Credit (acres)	2017 Delineated Acres ^(b)	2017 Mitigation Credit (acres)	2018 Delineated Acres ^(b)	2018 Mitigation Credit (acres)	2019 Delineated Acres ^{(b}	2019 Mitigation Credit (acres)
Creation (Establishment)	Wetland Cells 7, 9, 13, & 14	Lacustrine emergent	4.6	1:1	4.6	2.2	2.2	4.7	4.7	4.7	4.7
Restoration (Reestablishment)	Wetland Cells 1–6 and partial Cell 18	Lacustrine emergent and Palustrine emergent, scrub- shrub	14.0	1:1	14.0	6.8	6.8	6.1	6.1	7.3	7.3
Restoration (Rehabilitation)	Areas adjacent to Wetland Cells 1–12	Palustrine emergent, scrub- shrub	9.2	1.5:1	6.1	1.0	0.7	1.0	0.7	1.0	0.7
Enhancement	Wetland Cells 10– 12 & Partial Cell 8	Palustrine emergent, scrub- shrub	3.1	3:1	1.0	3.0	1.0	3.0	1.0	2.9	0.9
Preservation	Existing Wetland Areas	Palustrine emergent, scrub- shrub	21.9	4:1	5.5	20.5	5.1	17.6	4.4	17.4	4.4
Upland Buffer	50-foot-wide upland perimeter	N/A	7.3	5:1	1.5	7.3	1.5	7.3	1.5	7.3	1.5
	Total		60.1		32.7	40.8	17.3	39.7	18.4	40.6	19.5

⁽a) Cowardin et al. [1979].

⁽b) The 2017–2019 credit areas are derived were from a .dgn file (5034000ENDETZ01.DGN) provided by MDT. A shapefile of the credit areas (MDT_Crediting_polys.shp) was created in Autodesk Civil 3D, exported, laid over the 2018 delineated wetland boundaries in ArcMap, and used to calculate acreages.

Maps, Plans, Photos

Site Location Map



Project Area Maps/Figures: See Appendix A

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

Photos: See Appendix C

Plans: See Appendix D of 2018 Monitoring Report

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

Conclusions

Based on the results of the seventh year of monitoring, the Kindsfater mitigation site is continuing to develop into a diverse wetland ecosystem. The site is meeting a majority of the project's performance standards except those associated with survival of woody plantings. Woody planting survival was estimated at 12 percent in 2019 with substantial volunteer woody plants noted in several areas. The site is slowly trending positively toward planned wetland credit acreage goals but is currently 13.2 acres short of the intended goal.

References

Berglund, J. and R. McEldowney, 2008. *MDT Montana Wetland Assessment Method,* PBS&J Project B43072.00, prepared by Post, Buckley, Schuh, & Jernigan, Helena, MT, for the Montana Department of Transportation, Helena, MT.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe, 1979. *Classification of Wetlands and Deepwater Habitats of the United States,* FWS/OBS-79-31, prepared by the US Department of the Interior, Fish and Wildlife Service, Washington, DC.

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

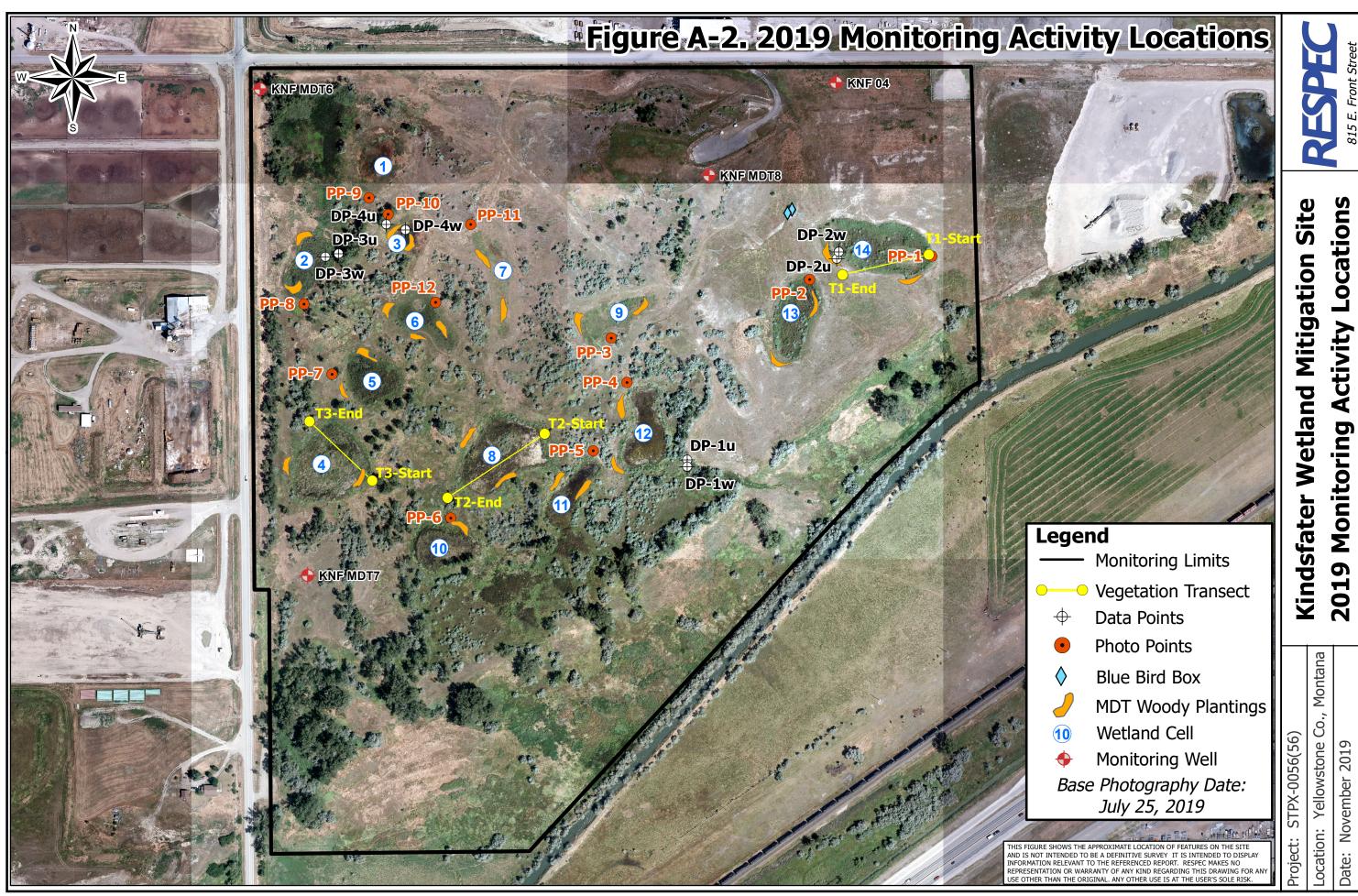
US Army Corps of Engineers, 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*, ERDC/EL TR-10-3, prepared by the US Army Corps of Engineers, US Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS.

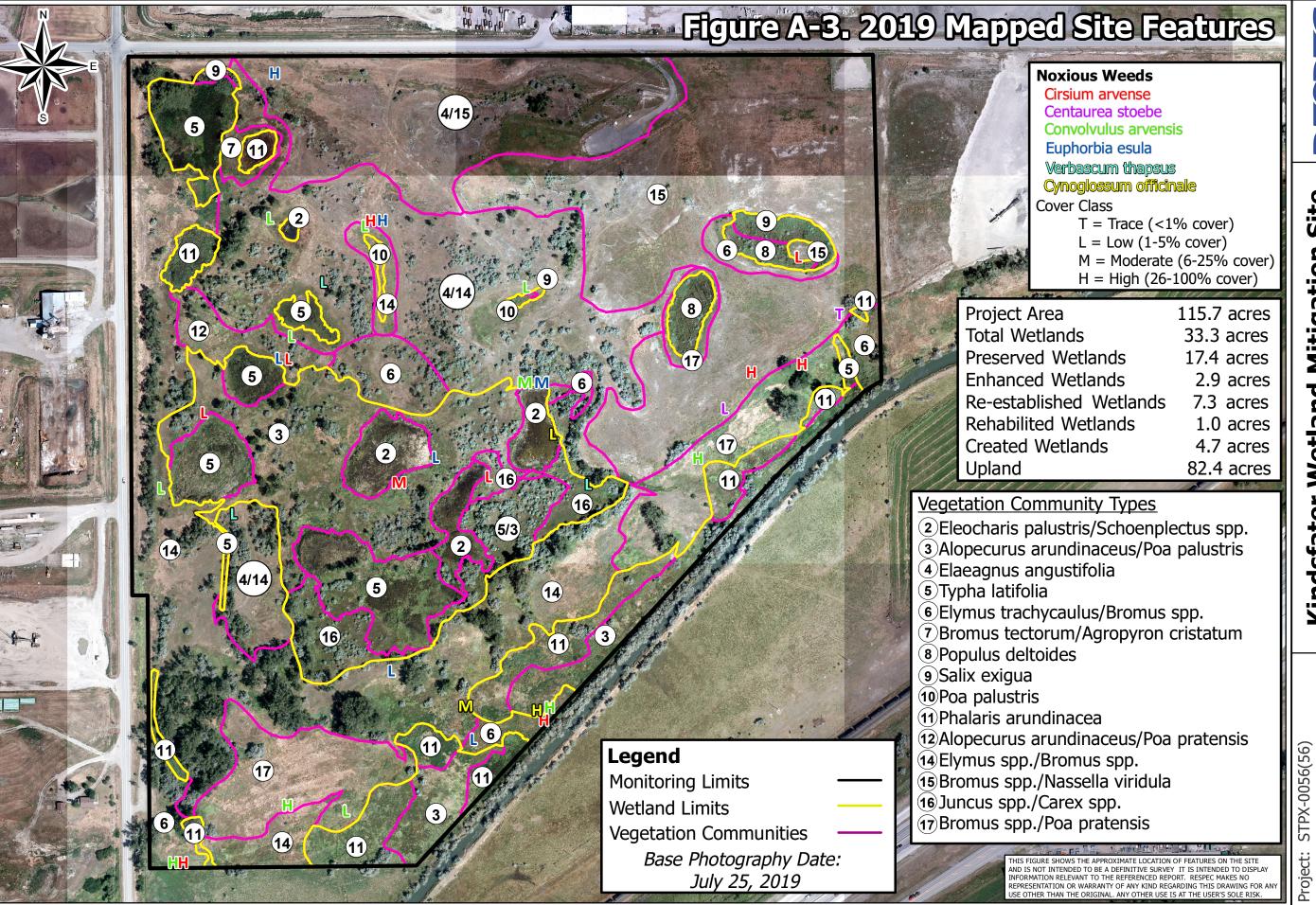
US Department of Agriculture, 2016. "Web Soil Survey for Yellowstone County, Montana," *usda.gov*, retrieved June 20, 2016, from *http://websoilsurvey.nrcs.usda.gov/app/*

APPENDIX A PROJECT AREA MAPS

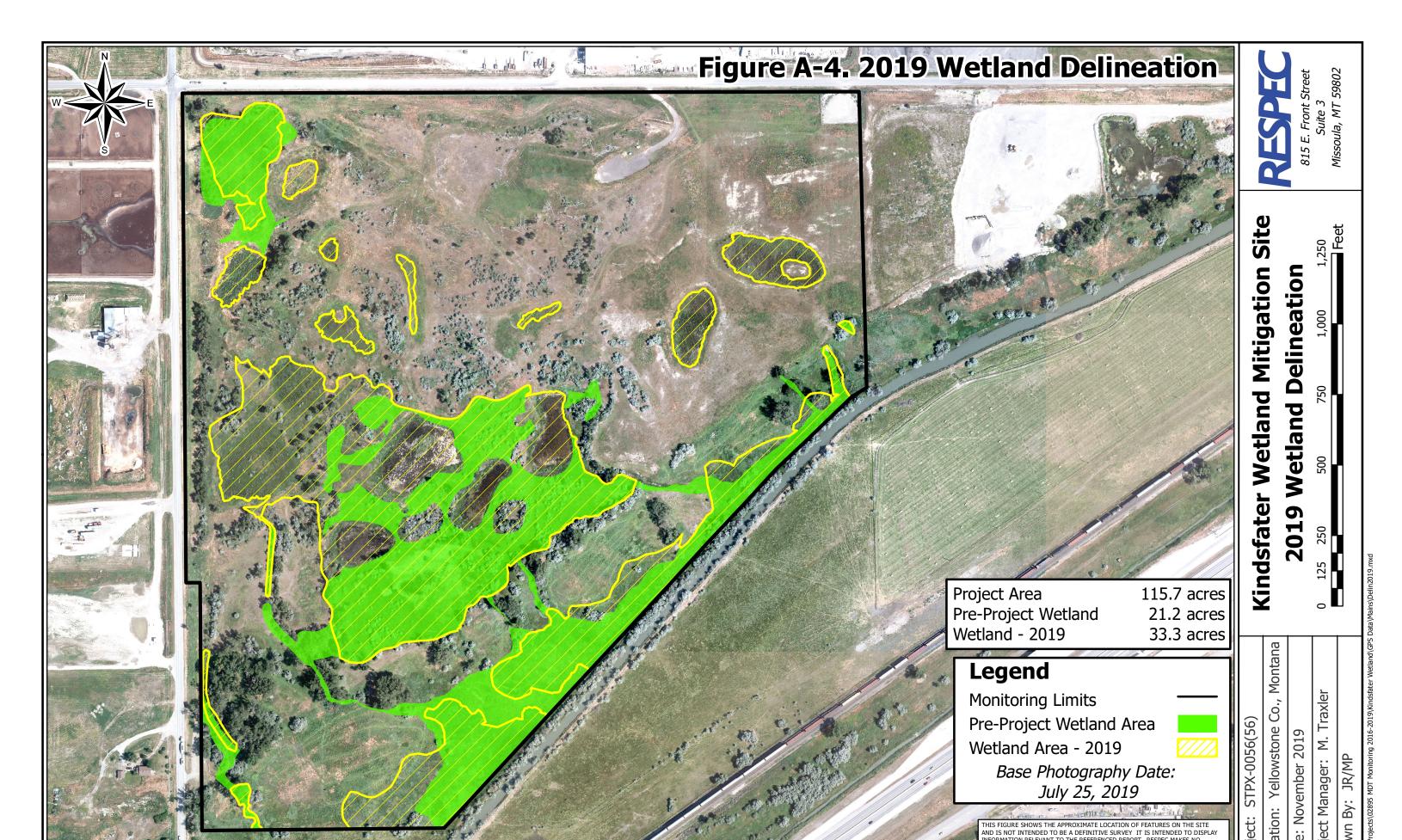
MDT Wetland Mitigation Monitoring Kindsfater Yellowstone County, Montana

A-1 RSI-2979





Kindsfater Wetland Mitigation Site **Site Features** Mapped



APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Kindsfater Yellowstone County, Montana

B-1 RSI-2979

RESPEC/MDT WETLAND MITIGATION SITE MONITORING FORM

Project Name: Kin Assessment Date: Hoschouer, and C Location: Laurel, Legal Description: Weather Condition Initial Evaluation I Size of evaluation agriculture	July 22, 20 2. Seibert MT T 2S s: Warm, o Date: Augu	R <u>25E</u> Se clear, calm 80F st 22, 2013	Person MDT ection <u>6</u> Monit	et Number: n(s) conducting the District: Billings Time of I oring Year: 4 # ounding wetland:	Day: 8:30 a Visits in Ye	Milepost: <u>NA</u> <u>m</u> ear: <u>1</u>	
		Н	YDROLO	GY			
Inundation: Present Percent of assessm Depth at emergent If assessment area Other evidence of I Saturation visible of ponded water a drainage patterns noted in numerous	Surface Water Source: Groundwater Inundation: Present						
Well Number	Depth	Well Number	Depth	Well Number	Depth	1	
Observe extent elevations (drif	vegetation- of surface t lines, eros vey ground	open water bound water during each sion, vegetation s water monitoring	h site visit a taining, etc. g well locati	nd look for eviden) ons, if present.			

VEGETATION COMMUNITIES

Community Number: 2 Community Title (main spp): Eleocharis palustris/Schoenoplectus pungens

Dominant Species	% Cover	Dominant Species	% Cover
Eleocharis palustris	3 = 11-20%	Schoenoplectus acutus	1 = 1-5%
Schoenplectus pungens	3 = 11-20%	Juncus gerardii, Juncus balticus	1 = 1-5%
Salix exigus, Salix lutea	2 = 6-10%	Populus deltoides	1 = 1-5%
Phalaria arundinacea	2 = 6-10%	Typha latifolia	1 = 1-5%
Carex pellita	2 = 6-10%	Scirpus microcarpus	1 = 1-5%
Alopecurus arundinaceus	1 = 1-5%	Water, rocks, mud flats	4 = 21-50%

Comments / Problems: <u>In 2019 Bromus spp. was removed as a codominant, there was a reduction in the Populus deltoides due to the open water within this community type over the past year.</u>

Community Number: 3 Community Title (main spp): Alopecurus arundinaceus/Poa palustris

Dominant Species	% Cover	Dominant Species	% Cover
Alopecurus arundinaceus	4 = 21-50%	Pascopyrum smithii	1 = 1-5%
Poa palustris	3 = 11-20%	Carex nebrascensis	1 = 1-5%
Poa pratensis	3 = 11-20%	Populus deltoides	2 = 6-10%
Elymus repens	2 = 6-10%	Sonchus arvensis	1 = 1-5%
Bromus tectorum	2 = 6-10%	Typha latifolia	+ = < 1%
Elymus trachycaulus	2 = 6-10%	Mentha arvensis	+=<1%

Comments / Problems: Existing slightly drier wetland community. Many other species were recorded representing 1 percent of less. Noted young Populus deltoides seedlings along the western boundary and an increase in Poa pratensis along the stream/ditch channel to the south. Juncus spp. (CT 16) and Phalaris arundinacea (CT 11) are replacing some areas previously mapped as CT 3.

Community Number: 4 Community Title (main spp): Elaeagnus angustifolia

Dominant Species	% Cover	Dominant Species	% Cover
Elaeagnus angustifolia	5 = > 50%	Elymus repens	1 = 1-5%
Populus deltoides	2 = 6-10%		
Populus angustifolia	1 = 1-5%		
Elaeagnus commutata	1 = 1-5%		
Elymus trachycaulus	1 = 1-5%		
Bromus tectorum	1 = 1-5%		

Comments / Problems: Scrub-shrub and forested community interspersed throughout upland community Types 14 and 15.

Community Number: 5 Community Title (main spp): **Typha latifolia**

Dominant Species	% Cover	Dominant Species	% Cover
Typha latifolia	5 = > 50%	Phalaris arundinacea	1 = 1-5%
Schoenoplectus acutus	3 = 11-20%	Persicaria amphibia	1 = 1-5%
Alopecurus arundinaceus	2 = 6-10%	Schoenoplectus pungens	1 = 1-5%
Marrubium vulgare	1 = 1-5%	Carex pellita	1 = 1-5%
Solanum dulcamara	1 = 1-5%	Salix lutea	1 = 1-5%
Polypogon monspeliensis	1 = 1-5%	Eleocharis palustris	1 = 1-5%

Comments / Problems: Pre-construction existing wetland community but expanding in 2018 and 2019.

VEGETATION COMMUNITIES (continued)

Community Number: 6 Community Title (main spp): Elymus trachycaulus/Bromus spp.

Dominant Species	% Cover	Dominant Species	% Cover
Elymus trachycaulus	3 = 11-20%	Convolvulus arvensis	1 = 1-5%
Bromus tectorum	3 = 11-20%	Cynoglossum officinale	1 = 1-5%
Poa pratensis	2 = 6-10%	Nassella viridula	1 = 1-5%
Elymus repens	2 = 6-10%	Cirsium arvense	1 = 1-5%
Bromus inermis	2 = 6-10%	Poa compressa	1 = 1-5%
Alopecurus arundinaceus	1 = 1-5%	Melilotus officinalis	+ = < 1%

Comments / Problems: Community generally located along the drier slope between the upper and lower terraces and along the western project boundary. In 2018 noticed a reduction in E. trachycaulus and an increase in E. repens and Bromus inermis (new CT 14) as well as Poa pratensis (CT 17).

Community Number: 7 Community Title (main spp): Bromus tectorum/Agropyron cristatum

Dominant Species	% Cover	Dominant Species	% Cover
Bromus tectorum	4 = 21-50%	Melilotus officinalis	1 = 1-5%
Agropyron cristatum	2 = 6-10%	Verbena bracteata	1 = 1-5%
Nassella viridula	2 = 6-10%	Bromus japonicus	1 = 1-5%
Artemisia frigida	2 = 6-10%	Convolvulus arvense	+=<1%
Medicago sativa	1 = 1-5%	Opuntia polyacantha	+=<1%
Marrubium vulgare	1 = 1-5%	Bare ground	2 = 6-10%

Comments / Problems: <u>Drier upland community type primarily in the southeastern portion of the project area.</u> In 2018, noted a decrease in the cover by Agropyron cristatum.

Community Number: **8** Community Title (main spp): **Populus deltoides**

Dominant Species	% Cover	Dominant Species	% Cover
Populus deltoides		Juneus balticus	1 = 1-5%
Salix exigua	3 = 11-20%	Juncus gerardii	1 = 1-5%
Poa palustris	2 = 6-10%	Salix lutea	1 = 1-5%
Eleocharis palustris	2 = 6-10%	Carex praegracilis	1 = 1-5%
Schoenoplectus pungens	2 = 6-10%	Elymus trachycaulus	1 = 1-5%
Polypogon monspeliensis	1 = 1-5%	Bare ground/Rock	2 = 6-10%

Comments / Problems: Natural encroachment of young Populus deltoides seedlings and saplings were the dominant species across several of the depressional wetlands. In 2019, a few cells transitioned from a dominance of Populus deltoids to Schoenoplectus pungens/Eleocharis palustris or Typha latifolia due to standing water.

Community Number: 9 Community Title (main spp): Salix exigua

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Dominant Species	% Cover	Dominant Species	% Cover	
Salix exigua	4 = 21-50%	Salix lutea	1 = 1-5%	
Populus deltoides	2 = 6-10%	Eleocharis palustris	1 = 1-5%	
Schoenoplectus pungens	2 = 6-10%	Typha latifolia	1 = 1-5%	
Juneus balticus	2 = 6-10%	Scirpus microcarpus	1 = 1-5%	
Poa palustris	2 = 6-10%	Epilobium ciliatum	1 = 1-5%	
Schoenoplectus acutus	2 = 6-10%	Elymus trachycaulus	1 = 1-5%	

Comments / Problems: New community type in 2016 and in 2018 has continued to develop within portions of the depressional wetlands.

VEGETATION COMMUNITIES (continued)

Community Number: **10** Community Title (main spp): **Poa palustris**

Dominant Species	% Cover	Dominant Species	% Cover
Poa palustris	4 = 21-50%	Eleocharis palustris	1 = 1-5%
Elymus trachycaulus	2 = 6-10%	Carex nebrascensis	1 = 1-5%
Bromus arvensis	2 = 6-10%	Cirsium arvense	+ = < 1%
Alopecurus arundinaceus	2 = 6-10%	Lactuca serriola	+ = < 1%
Poa pratensis	2 = 6-10%	Polypogon monspeliensis	+ = < 1%
Salix exigua	1 = 1-5%	Phalaris arundinacea	+ = < 1%

Comments / Problems: <u>Several of the restored wetland cells have converted from Community Type 2</u> (<u>Eleocharis palustris/Bromus spp.</u>) to a dominance of Poa palustris.

Community Number: 11 Community Title (main spp): Phalaris arundinacea

Dominant Species	% Cover	Dominant Species	% Cover
Phalaris arundinacea	5 = > 50%		
Alopecurus arundinaceus	2 = 6-10%		
Elymus repens	1 = 1-5%		

Comments / Problems: <u>Noted an increase in this community type in 2018 and 2019, especially along the lower bench.</u>

Community Number: 12 Community Title (main spp): Alopecurus arundinaceus/Poa pratensis

Dominant Species	% Cover	Dominant Species	% Cover
Alopecurus arundinaceus	4 = 21-50%	Elaeagnus angustifolia	2 = 6-10%
Poa pratensis	3 = 11-20%	Agropyron cristatum	1 = 1-5%
Elymus trachycaulus	2 = 6-10%	Cirsium arvense	+ = < 1%
Elymus repens	2 = 6-10%		
Bromus tectorum	2 = 6-10%		
Populus deltoides	2 = 6-10%		

Comments / Problems: <u>A new community type in 2017 primarily along the western project boundary</u> previously Community Type 4/7.

Community Number: 14 Community Title (main spp): Elymus spp./Bromus spp.

Dominant Species	% Cover	Dominant Species	% Cover
Elymus repens	4 = 21-50%	Elymus lanceolatus	1 = 1-5%
Elymus trachycaulus	2 = 6-10%	Agropyron cristatum	1 = 1-5%
Bromus inermis	2 = 6-10%	Convolvulus arvensis	1 = 1-5%
Bromus tectorum	3 = 11-20%	Artemisia frigida	1 = 1-5%
Bromus japonicus	1 = 1-5%	Nassella viridula	1 = 1-5%
Melilotus officinalis	1 = 1-5%	Pascopyrum smithii	1 = 1-5%

Comments / Problems: <u>A new community type in 2018 along the southeastern boundary (lower terrace)</u>, and across the western and central portion of the project area, previously CT 6 or CT 7.

VEGETATION COMMUNITIES (continued)

Community Number: <u>15</u> Community Title (main spp): <u>Bromus spp./Nassella viridula</u>

Dominant Species	% Cover	Dominant Species	% Cover
Bromus tectorum	4 = 21-50%	Verbena bracteata	1 = 1-5%
Bromus inermis	2 = 6-10%	Bromus japonicus	1 = 1-5%
Nassella viridula	3 = 11-20%	Convolvulus arvense	+=<1%
Agropyron cristatum	2 = 6-10%	Opuntia polyacantha	+=<1%
Medicago sativa	2 = 6-10%	Marrubium vulgare	1 = 1-5%
Artemisia dracunculus	2 = 6-10%	Bare ground	2 = 6-10%

Comments / Problems: <u>A new community type in 2018 noting the increase in Nassella viridula and the reduction of Agropyron cristatum (CT 7).</u>

Community Number: 16 Community Title (main spp): Juncus spp./Carex spp.

Dominant Species	% Cover	Dominant Species	% Cover
Juneus balticus	3 = 11-20%	Typha latifolia	2 = 6-10%
Juncus torreyi	1 = 1-5%	Persicaria amphibia	1 = 1-5%
Juncus gerardii	1 = 1-5%	Phalaris arundinacea	2 = 6-10%
Carex nebrascensis	2 = 6-10%	Alopecurus arundinaceus	1 = 1-5%
Carex aquatilis	2 = 6-10%	Carex utriculata	1 = 1-5%
Carex pellita	2 = 6-10%	Eleocharis palustris	1 = 1-5%

Comments / Problems: A new community type noted in 2018 where Juncus is replacing small areas of declining Community Type 5 or Community Type 2. In 2019 Carex spp. was added as a codominant.

Community Number: 17 Community Title (main spp): Bromus spp./Poa pratensis

Dominant Species	% Cover	Dominant Species	% Cover
Bromus inermis	3 = 11-20%	Alopecurus arundinaceus	1 = 1-5%
Bromus tectorum	3 = 11-20%	Lactuca serriola	1 = 1-5%
Poa pratensis	3 = 11-20%	Elymus trachycaulus	1 = 1-5%
Elymus repens	1 = 1-5%	Cirsium arvense	1 = 1-5%
Pascopyrum smithii	2 = 6-10%	Convolvulus arvense	1 = 1-5%
Poa compressa	1 = 1-5%	Bare ground	1 = 1-5%

Comments / Problems: <u>A new small community type in 2018 along portions of the the lower slope and terrace in the southern portion of the project, formerly Community Type 6.</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
Cornus alba	130	0	
Crataegus douglasii	50	0	
Juniperus scopulorum	50	3	
Populus spp.	140	42	
Prunus virginiana	50	6	
Rosa woodsii	50	3	
Salix spp.	2800	303	Salix exigua best survival
Shepherdia argentea	50	2	
	3320	359	

Comments / Problems: Approximately 27 woody planting areas were mapped by MDT in 2013, generally located around the excavated basins. Locations for the planted vegetation are shown on Figure A-2. During the 2019 monitoring, each individual planting group was monitored and live woody plants were counted by species. Approximately 12 percent of the woody plants were alive in 2019, this is a slight increase from 2018, a few additional Juniperus scopulorum, Rosa woodsii and Shepherdia argentea young plants observed during the July 2019 monitoring.

Site: Kindsfater Date: July 22, 2019 Examiner: C. Seibert, T. Traxler, C. Hoschouer

Transect Number: 1 Approximate Transect Length: 300 feet Compass Direction from Start: 240° Note:

Transect Interval Length: 10 ft (station 0 to 10) Vegetation Community Type: Bromus spp./Nassella virid	ula
Plant Species	Cover
Bromus tectorum	4 = 21-50%
Bromus inermis	2 = 6-10%
Nassella viridula	2 = 6-10%
Taraxacum officinale	1 = 1-5%
Agropyron cristatum, Elymus trachycaulus	1 = 1-5%
Fumaria vaillantii	1 = 1-5%
Medicago lupulina, Melilotus officinale	1 = 1-5%
Tragopogon dubius, Lactuca serriola	1 = 1-5%
Sporobolus cryptendrus	1 = 1-5%
Convolvulus arvensis, Verbascum thapsus	1 = 1-5%
Bare ground, litter	4 = 21-50%
Total Vegetative Cover:	70%

Transect Interval Length: 50 ft (station 10 to 60)		
Vegetation Community Type: Salix exigua		
Plant Species	Cover	
Salix exigua	4 = 21-50%	
Populus deltoides	3 = 11-20%	
Juneus balticus	2 = 6-10%	
Schoenoplectus pungens	2 = 6-10%	
Nepeta cataria	1 = 1-5%	
Bromus inermis	1 = 1-5%	
Juncus gerardii	1 = 1-5%	
Cirsium arvense	1 = 1-5%	
Salix spp., Salix lutea	1 = 1-5%	
Poa palustris	1 = 1-5%	
Bare ground, litter	1 = 1-5%	
Total Vegetative Cover:	95%	

Transect Interval Length: 70 ft (station 60 to 130)		
Vegetation Community Type: Bromus spp./Nassella viridula		
Plant Species	Cover	
Bromus tectorum	4 = 21-50%	
Bromus inermis	2 = 6-10%	
Nassella viridula	3 = 11-20%	
Sporobolus cryptendrus	2 = 6-10%	
Melilotus officinalis, Agrostis stolonifera	2 = 6-10%	
Bromus japonicus, Elymus repens	2 = 6-10%	
Artemisia frigida, Elymus trachycaulus	1 = 1-5%	
Sisymbrium altissimum	1 = 1-5%	
Erigeron canadensis	1 = 1-5%	
Cirsium arvense	1 = 1-5%	
Helianthus annuus, Lactuca serriola, Marrubium vulgare	1 = 1-5%	
Bare ground, litter	3 = 11-20%	
Total Vegetative Cover: 80%		

Transect Interval Length: 115 ft (station 130 to 245)			
Vegetation Community Type: Populus deltoides			
Plant Species	Cover		
Populus deltoides	4 = 21-50%		
Salix exigua, Salix lutea	4 = 21-50%		
Elaeagnus angustifolia	1 = 1-5%		
Poa palustris	1 = 1-5%		
Juneus balticus	1 = 1-5%		
Melicago lupulina	1 = 1-5%		
Cirsium arvense, Convolvulus arvensis	1 = 1-5%		
Bromus inermis	1 = 1-5%		
Sonchus arvensis	1 = 1-5%		
Elymus trachcaulus	1 = 1-5%		
Bare ground, rock, litter	2 = 6-10%		
Total Vegetative Cover:	95%		

Site: Kindsfater
Transect Number: 1

Date: July 22, 2019
Examiner: C. Seibert, T. Traxler, C. Hoschouer

Approximate Transect Length: 300 feet
Compass Direction from Start: 240° Note:

Transect Interval Length: 55 ft (station 245 to 300)		
Vegetation Community Type: Bromus spp./Nassella viridula		
Plant Species	Cover	
Bromus tectorum, Bromus japonicus	4 = 21-50%	
Nassella viridula, Agropyron cristatusm	3 = 11-20%	
Bromus inermis	2 = 6-10%	
Sporobolus cryptandrus	1 = 1-5%	
Poa pratensis, Poa compressa, Poa palustris	1 = 1-5%	
Salix exigua	1 = 1-5%	
Lactuca serriola, Erodium cicutarium	1 = 1-5%	
Convolvulus arvensis, Cirsium arvense	1 = 1-5%	
Melilotus officinalis, Melilotus albus	2 = 6-10%	
Medicago lupulina, Tragopogon dubius	1 = 1-5%	
Bare ground, litter, rock	3 = 11-20%	
Total Vegetative Cover:	80%	

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

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

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

Site: Kindsfater Date: July 22, 2019 Examiner: C. Seibert, T. Traxler, C. Hoschouer

Transect Number: 2 Approximate Transect Length: 388 feet Compass Direction from Start: 255° Note:

Transect Interval Length: 25 ft (station 0 to 25)		
Vegetation Community Type: Alopecurus arundinaceus/Poa palustris		
Plant Species	Cover	
Alopecurus arundinaceus	3 = 11-20%	
Poa palustris	2 = 6-10%	
Eleocharis palustris	1 = 1-5%	
Populus deltoides	1 = 1-5%	
Elaeagnus angustifolia	1 = 1-5%	
Agrostis stolonifera	1 = 1-5%	
Elymus repens	1 = 1-5%	
Bromus inermis	1 = 1-5%	
Salix lutea	1 = 1-5%	
Schoenoplectus pungens	1 = 1-5%	
Total Vegetative Cover:	85%	

Transect Interval Length: 315 ft (station 33 to 348)		
Vegetation Community Type: Elec		oplectus spp.
Plant Specie	S	Cover
Schoenoplectus pungens		3 = 11-20%
Schoenoplectus acutus		2 = 6-10%
Eleocharis palustris		3 = 11-20%
Salix exigua, Salut lutea		2 = 6-10%
Carex pellita		1 = 1-5%
Typha latifolia		1 = 1-5%
Alopecurus arundinaceus		1 = 1-5%
Juncus gerardii		1 = 1-5%
Juneus balticus		1 = 1-5%
Veronica anagallis-aquatica		1 = 1-5%
Open water		4 = 21-50%
Mud flats		3 = 11-20%
T	otal Vegetative Cover:	65%

Transect Interval Length: 8 ft (station 25 to 33)				
Vegetation Community Type: Typha latifolia				
Plant Species	Cover			
Typha latifolia	4 = 21-50%			
Alopecurus arundinaceus	3 = 11-20%			
Eleocharis palustris	1 = 1-5%			
Hordeum jubatum, Poa palustris	1 = 1-5%			
Elymus repens	1 = 1-5%			
Salix exigua, Salix lutea	2 = 6-10%			
Carex pellita	1 = 1-5%			
Populus deltoides	1 = 1-5%			
Schoenoplectus acutus	1 = 1-5%			
Juncus gerardii	1 = 1-5%			
Mud flats	3 = 11-20%			
Total Vegetative Cover:	80%			

Transect Interval Length: 40 ft (station 348 to 388)				
Vegetation Community Type: Alopecurus arundinaceus/Poa palustris				
Plant Species	Cover			
Alopecurus arundinaceus	4 = 21-50%			
Poa palustris	3 = 11-20%			
Poa pratensis	2 = 6-10%			
Schoenoplectus pungens	2 = 6-10%			
Typha latifolia	2 = 6-10%			
Carex pellita	2 = 6-10%			
Populus deltoides	1 = 1-5%			
Phalaris arundinacea	1 = 1-5%			
Agropyron trachycaulum	1 = 1-5%			
Juncus balticus	1 = 1-5%			
Bare ground, litter, rock	3 = 11-20%			
Total Vegetative Cover:	85%			

Site: Kindsfater Date: July 22, 2019 Examiner: C. Seibert, T. Traxler, C. Hoschouer

Transect Number: 3 Approximate Transect Length: 292 feet Compass Direction from Start: 290° Note:

Transect Interval Length: 100 ft (station 0 to 100)			
Vegetation Community Type: Alopecurus arundinaceus/Poa palustris			
Plant Species	Cover		
Alopecurus arundinaceus	4 = 21-50%		
Poa palustris	2 = 6-10%		
Typha latifolia	2 = 6-10%		
Carex utriculata, Carex nebrascensis, Carex aquatilis	1 = 1-5%		
Schoenoplectus acutus	2 = 6-10%		
Phalaris arundinacea	1 = 1-5%		
Lycopus asper	1 = 1-5%		
Populus deltoides, Elaeagnus angustifolia	1 = 1-5%		
Persicaria amphibia	1 = 1-5%		
Poa pratensis	1 = 1-5%		
Bare ground, litter	2 = 6-10%		
Total Vegetative Cover:	90%		

Transect Interval Length: 24 ft (station 268 to 292)				
Vegetation Community Type: Elymus spp./Bromus spp.				
Plant Species	Cover			
Elymus repens	3 = 11-20%			
Bromus tectorum	2 = 6-10%			
Schedonorus pratensis	2 = 6-10%			
Alopecurus arundinaceus	1 = 1-5%			
Sisymbrium loeselii	1 = 1-5%			
Poa pratensis	1 = 1-5%			
Phalaris arundinacea	1 = 1-5%			
Lepidium campestre	1 = 1-5%			
Melilotus officinalis	1 = 1-5%			
Convolvulus arvensis	1 = 1-5%			
Tragopogon dubius	+ = < 1%			
Bare ground, litter	2 = 6-10%			
Total Vegetative Cover:	90%			

Transect Interval Length: 168 ft (station 100 to 268)				
Vegetation Community Type: Typha latifolia				
Plant Species	Cover			
Typha latifolia	4 = 21-50%			
Schoenoplectus acutus	3 = 11-20%			
Alopecurus arundinaceus	3 = 11-20%			
Phalaris arundinacea	2 = 6-10%			
Juncus balticus, Eleocharis palustris	1 = 1-5%			
Salix exigua, Populus deltoides	1 = 1-5%			
Polygonum amphibium	1 = 1-5%			
Poa palustris	1 = 1-5%			
Carex utriculata, Carex aquatilis	2 = 6-10%			
Carex pellita	1 = 1-5%			
Bare ground, litter, open water	3 = 11-20%			
Total Vegetative Cover:	85%			

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

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

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

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

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

Comments: A comprehensive species list for each transect interval length was recorded during the July 2019 monitoring. Typically, species with less than 1 percent were not included on the forms but were used to calculate total upland and wetland species for the summary tables.

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 Checklis	t :
One photograp	h for each of the four cardinal directions surrounding the wetland.
At least one ph	otograph showing upland use surrounding the wetland. If more than one upland
exists then ta	ke 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	1	Wetland cell 14 45.69342/-108.690247	280
PP-2	1	Wetland cell 13 45.695136/-108.691839	280
PP-3	1	Wetland cell 9 45.694612/-108.69443	0
PP-4	1	Wetland cell 12 45.694935/-108.691902	200
PP-5	1	Wetland cell 11 45.694748/-108.694458	10
PP-6	1	Wetland cell 10 45.694084/-108.694321	150
PP-7	1	Wetland cell 5 45.698065/-108.698065	90
PP-8	1	Wetland cell 2 45.694939/-108.698429	315
PP-9	1	Wetland cell 1 45.694302/-108.698044	90
PP-10	1	Wetland cell 3 45.694847/-108.698418	140
PP-11	1	Wetland cell 7 45.695892/-108.697601	350
PP-12	1	Wetland cell 6 45.694939/-108.696663	230
T-1-S	1	Transect 1 start 45.695357/-108.690285	240
T-1-E	1	Transect 1 end 45.695072/-108.691437	50
T-2-S	1	Transect 2 start 45.693763/-108.695288	225
T-2-E	1	Transect 2 end 45.693184/-208.696573	40
T-3-S	1	Transect 3 start 45.693317/-108.697517	290
T-3-E	1	Transect 3 end 45.693317/-108.698486	110
DP-1w		45.413580/-108.413626	
DP-1u		45.41363/-108.413678	
DP-2w		45.414297/-108.412870	
DP-2u		45.414276/-108.413014	
DP-3w		45.414272/-108.415480	
DP-3u		45.41432/-108.415440	
DP-4w		45.414394/-108.414961	
DP-4u		45.414436/-108.415050	

Comments /	Problems:	

GPS SURVEYING

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

 ✓ Upland/wetland boundary. ✓ 4-6 landmarks that are recognizable on the aerial photograph. ✓ Start and End points of vegetation transect(s). ✓ Photograph reference points. ✓ Groundwater monitoring well locations.
Start and End points of vegetation transect(s).Photograph reference points.
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>Yes</u>
Were man-made nesting structure installed at this site? <u>Yes</u> If yes, do they need to be repaired? <u>Yes</u>
Were man-made nesting structure installed at this site? <u>Yes</u>
Were man-made nesting structure installed at this site? <u>Yes</u> If yes, do they need to be repaired? <u>Yes</u>
Were man-made nesting structure installed at this site? <u>Yes</u> If yes, do they need to be repaired? <u>Yes</u> If yes, describe the problems below and indicate if any actions were taken to remedy the problems.
Were man-made nesting structure installed at this site? <u>Yes</u> If yes, do they need to be repaired? <u>Yes</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>
Were man-made nesting structure installed at this site? <u>Yes</u> If yes, do they need to be repaired? <u>Yes</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>

WILDLIFE

Birds

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

Do the nesting structures need repairs? Yes

Mammals and Herptiles

Mammal and Hamtile Species	Number	Indirect Indication of Use			
Mammal and Herptile Species	Observed	Tracks	Scat	Burrows	Other
White-tailed Deer (fawn)	1	\boxtimes			beds
Frogs (tiny)	2				

Additional Activities Checklist:

NA Macroinvertebrate Sampling (if required)

Comments / Problems: The trees with the two bird boxes have fallen over.

BIRD SURVEY - FIELD DATA SHEET

Site: <u>Kindsfater</u> Date: <u>7/22/19</u> Survey Time: <u>8:30</u> am to <u>6</u> pm

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat	
American Robin	1	L	FO	Brewer's Blackbird	6	FO	WM	
Canada Goose	12	FO	UP	American Coot	1	FO	WM	
Common Yellowthroat	1	F	MA					
Eastern Kingbird	1	L	SS					
House Wren	2	F	UP					
Hungarian Partridge	12	F	WM					
European Starling	2	L FO	SS					
Mourning Doves	8	BD FO	FO					
Northern Flicker	2	L	FO					
Red-winged Blackbird	10	LBPF	MA OW					
			WM					
Ring-necked Pheasant	1	L	UP					
Western Kingbird	1	L	SS					
Yellow Warbler	3	BD	UP					
Killdeer	1	FO	UP					
Tree Swallow	1	FO	UP					
Yellow-headed	2	FO	WM					
Blackbird								
Rock Pigeon	4	FO	FO					
Owl	1	L	FO					

BEHAVIOR CODES

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

F = Foraging
FO = Flyover

L = LoafingN = Nesting HABITAT CODES

 $\begin{aligned} \textbf{AB} &= \text{Aquatic bed} & \textbf{SS} &= \text{Scrub/Shrub} \\ \textbf{FO} &= \text{Forested} & \textbf{UP} &= \text{Upland buffer} \\ \textbf{I} &= \text{Island} & \textbf{WM} &= \text{Wet meadow} \end{aligned}$

MA = Marsh
US = Unconsolidated shore

MF = Mud Flat OW = Open Water

Weather: Humid, late afternoon temperature, 94 degrees around 4 pm.

Notes:

Kindsfater: 2013-2019 Vegetation List

Scientific Names	Common Names	GP Indicator Status ^(a)		
Achillea millefolium	Common Yarrow	FACU		
Agropyron cristatum	Crested Wheatgrass	UPL		
Agrostis stolonifera	Spreading Bent	FACW		
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FACW		
Alyssum alyssoides	Pale or Yellow Alyssum	UPL		
Alyssum desertorum	Dwarf Alyssum	UPL		
Amaranthus retroflexus	Red-Root	FACU		
Artemisia absinthium	Common Sagewort	UPL		
Artemisia dracunculus	Wild Tarragon	UPL		
Artemisia frigida	Fringed Sage	UPL		
Artemisia michauxiana	Michaux Sagewort	FAC		
Asclepias speciosa	Showy Milkweed	FAC		
Atriplex suckleyi	Suckley's Saltbush	UPL		
Bassia scoparia (Kochia scoparia)	Mexican-Fireweed	FACU		
Berteroa incana	Hoary False Alyssum	UPL		
Brassica nigra	Black Mustard	UPL		
Bromus arvensis	Field Brome	FACU		
Bromus inermis	Smooth Brome	UPL		
Bromus japonicus	Japanese Brome	UPL		
Bromus tectorum	Cheatgrass	UPL		
Calamagrostis canadensis	Bluejoint	FACW		
Carduus nutans	Musk Thistle	UPL		
Carex aquatilis	Leafy Tussock Sedge	OBL		
Carex nebrascensis	Nebraska Sedge	OBL		
Carex pellita	Wooly Sedge	OBL		
Carex praegracilis	Clustered Field Sedge	FACW		
Carex utriculata	Northwest Territory Sedge	OBL		
Centaurea stoebe	Spotted Knapweed	UPL		
Centaurium exaltatum	Centaury	UPL		
Ceratophyllum demersum	Coon's-Tail	OBL		
Chenopodium album	Lamb's-Quarters	FACU		
Chenopodium sp.	Goosefoot	NL		
Cirsium arvense	Canadian Thistle	FACU		
Cirsium vulgare	Bull Thistle	UPL		
Conium maculatum	Poison-Hemlock	FACW		
Convolvulus arvensis	Field Bindweed	UPL		
Cornus alba	Red Osier	FACW		
Crepis atribarba	Hawksbeard	UPL		
Cynoglossum officinale	Gypsy-Flower	FACU		

Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia sophia	Flixweed Tansymustard	UPL
Elaeagnus angustifolia	Russian-Olive	FACU
Elaeagnus commutata	American Silver-Berry	UPL
Eleocharis palustris	Common Spike-Rush	OBL
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum hyemale	Tall Scouring-Rush	FACW
Equisetum laevigatum	Smooth Scouring Rush	FACW
Erigeron caespitosus	Tufted Fleabane	UPL
Erigeron canadensis	Canada Horseweed	FACU
Erodium cicutarium	Stork's bill	UPL
Euphorbia esula	Leafy Spurge	UPL
Fumaria vaillantii	Fumitory	UPL
Fraxinus pennsylvanica	Green Ash	FAC
Galium aparine	Sticky-Willy	FACU
Gaura parviflora	Butterfly Weed	UPL
Glycyrrhiza lepidota	American Licorice	FACU
Grindelia squarrosa	Curly-Cup Gumweed	FACU
Helianthus annuus	Common Sunflower	FACU
Hesperostipa comata	Needle-and-Thread	UPL
Heterotheca villosa	Golden-Aster	UPL
Hordeum jubatum	Fox-Tail Barley	FACW
Hyoscyamus niger	Black Henbane	UPL
Juncus articulatus	Joint-Leaf Rush	OBL
Juncus balticus	Baltic Rush	FACW
Juncus ensifolius	Dagger-Leaf Rush	FACW
Juncus gerardii	Saltmarsh Rush	FACW
Juncus longistylis	Long-style Rush	FACW
Juncus torreyi	Torrey's Rush	FACW
Juniperus scopulorum	Rocky Mountain Juniper	UPL
Koeleria macrantha	Prairie Junegrass	UPL
Lactuca serriola	Prickly Lettuce	FAC
Lemna minor	Common Duckweed	OBL
Lepidium campestre	Field Pepperweed	UPL
Logfia arvensis	Fluffweed	UPL
Lepidium perfoliatum	Clasping Pepperwort	FACU
Lycopus asper	Rough Water-Horehound	OBL
Marrubium vulgare	White Horehound	FACU
Medicago lupulina	Black Medick	FACU
Medicago sativa	Alfalfa	UPL

White Sweetclover	FACU
	FACU
	FACW
	FACW
· · · · · · · · · · · · · · · · · · ·	UPL
-	OBL
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• • • • • • • • • • • • • • • • • • • •	FAC
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·	FACU
	FACW
	FACW
	FAC
	FACW
Buttercup	
Pennsylvania Cinquefoil	FACU
Prairie Coneflower	UPL
Wood's Rose	FACU
Curly Dock	FAC
Willow Dock	FACW
Narrow-Leaf Willow	FACW
N/ 11 NA/111	
Yellow Willow	FACW
Yellow Willow Willow	NL FACW
Willow	NL
Willow Prickly Russian-Thistle	NL FACU
Willow Prickly Russian-Thistle Tall False Rye Grass	NL FACU FAC
Willow Prickly Russian-Thistle Tall False Rye Grass False Meadow Rye	NL FACU FAC FACU
Willow Prickly Russian-Thistle Tall False Rye Grass False Meadow Rye Flax-leaf Plains Mustard Hard-Stem Club-Rush	NL FACU FAC FACU UPL
Willow Prickly Russian-Thistle Tall False Rye Grass False Meadow Rye Flax-leaf Plains Mustard	NL FACU FAC FACU UPL OBL
Willow Prickly Russian-Thistle Tall False Rye Grass False Meadow Rye Flax-leaf Plains Mustard Hard-Stem Club-Rush Three-Square	NL FACU FAC FACU UPL OBL OBL
Willow Prickly Russian-Thistle Tall False Rye Grass False Meadow Rye Flax-leaf Plains Mustard Hard-Stem Club-Rush Three-Square Red-Tinge Bulrush White Cockle	NL FACU FAC FACU UPL OBL OBL OBL
Willow Prickly Russian-Thistle Tall False Rye Grass False Meadow Rye Flax-leaf Plains Mustard Hard-Stem Club-Rush Three-Square Red-Tinge Bulrush	NL FACU FAC FACU UPL OBL OBL OBL UPL
	Pennsylvania Cinquefoil Prairie Coneflower Wood's Rose Curly Dock Willow Dock Narrow-Leaf Willow

Solidago canadensis	Canadian Goldenrod	FACU
Sonchus arvensis	Field Sow-Thistle	FAC
Sphaeralcea coccinea	Scarlet Globemallow	UPL
Tanacetum vulgare	Common Tansy	FACU
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Typha angustifolia	Narrow-Leaf Cat-Tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Ulmus americana	American Elm	FAC
Verbascum thapsus	Great Mullein	UPL
Verbena bracteata	Carpet Vervain	FACU
Veronica anagallis-aquatica	Blue Water Speedwell	OBL
Veronica peregrina	Neckweed	FACW
Vicia americana	American Purple Vetch	FACU
Vicia sativa	Garden Vetch	FACU
Xanthium strumarium	Rough Cockleburr	FAC
Zeltnera exaltata	Desert Mountain-pink	FACW
(a) 2016 NWPL (Lichvar et al.,		
2016).		
New species identified in 2019 ar	e bolded.	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Investigator(s): Cindy Hoschouer, Tanner Traxler Section, Township, Range: S 6 T 2S R 25E Local relief (concave, convex, none): convex Slope: 1.0 % / 0.6	Project/Site: Kindsfater		Ci	City/County: Yellowstone			Sampling Date: 22-Jul-19				
Landform (hilliotops, terrace, etc.): Bench Lat. 45,693478 Long.: Illis 693517 Datum: WCS84 IMPURIT Name: Larin cravelly loam. 15 to 35 percent sloces e dimatic hydrologic conditions on the site bytical for this time of year? Are Vegetation , Soll , Or Hydrology anaturally problematic? March Septention , Soll , Or Hydrology anaturally problematic? March Septention , Soll , Or Hydrology , Soll , S	Applicant/Owner: MDT				State:	: <u>MT</u>	Sampling Point:		DP-1U		
Lati: 45.693478 Long: 106.993517 Datum: WCS94	Investigator(s): Cindy Hoschouer, Tann	ier Traxler		Section, To	wnship, Ra	inge: S 6					
and the point Name: arim argave v coam. 15 to 35 percent sloves Yes No The operation No Majored and the command of the project of this time of year? Yes No Are "Romal Crumanace" present? Yes No Are Vegetation , soli , or Hydrology significantly problematic? (If needed, explain in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.	Landform (hillslope, terrace, etc.): E	3ench		Local relief	(concave, c	convex, none):	convex	Slope:	1.0 %/	0.6	
and the point Name: arim argave v coam. 15 to 35 percent sloves Yes No The operation No Majored and the command of the project of this time of year? Yes No Are "Romal Crumanace" present? Yes No Are Vegetation , soli , or Hydrology significantly problematic? (If needed, explain in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.			 Lat.: 45.6	693478		Long.: -108.6	93517	Datı	um: WGS8	4	
are distable hydrologic conditions on the site typical for this time of year? Are Vegetation	ioil Map Unit Name: Larim gravelly lo	nam 15 to 35 percent						 Not Mappe			
Are Vegetation				Ye	s No				<u>.u</u>		
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc. Hydric Soil Present?			•			(=: ::-), -:	-	-	No O		
Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No ® Wetdand Hydrology Present? Yes No ® Wetdand Hydrology Present? Yes No ® Wetdand Hydrology Present? Yes No ® WetGand Hydrology Present? Yes No ® Is the Sampled Area within a Wetland? Yes No ® WetGand Hydrology Present? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area within a Wetland? Yes No ® Is the Sampled Area with			-				•		-		
Hydrophytic Vegetation Present? Yes	e : • 	_			•		-	•	eatures.	etc.	
## Wetland Hydrology Present? Yes							13000,				
### Wetland Hydrology Present?					-		\sim				
Note	•			withir	ո a Wetland	_{I?} Yes ∪ No	•				
VEGETATION - Use scientific names of plants											
Absolute Rel. Strat Nominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)	in 2019.	· 	lants	Dominant			portion of the proj	ject. Point	moved slig	ıhtly	
1. Eleasgnus angustifolia 2. Populus detoides 5	(5) 1 20 5 21	,	Absolute	Rel.Strat.		Dominance Te	est worksheet:				
2. Populus deltoides 3.		Radius)	-								
3.						That are OBL, F.	ACW, or FAC:	:	<u>1</u> (A	4)	
Saolina/Shrub Stratum	3			$\overline{}$	FAC						
Percent of dominant Species 20.0% (N/8)						Species Across A	All Strata:	!	<u>5</u> (E	3)	
That Are OBL, FACW, or FAC: 20.0% (A/B)						Percent of dor	minant Species				
1.	Sapling/Shrub Stratum (Plot size:	15 Foot Radius)		= IOLAI CO	ver		•	20.	<u>0%</u> (A	√ B)	
2.			0			Prevalence Inc	dex worksheet:				
3.	· · · · · · · · · · · · · · · · · · ·		0					Aultiply by:	ı		
4.	3		0								
Secondary Fac Species Secondary Species Secon				□		FACW species	s <u>0</u> >	(2 = _	0		
Herb Stratum	5			□		·		3 = _	15		
Nerb Stratum Plot size: 5 Foot Radius 1. Poa pratensis 40	(5))		0	= Total Co	ver	·	00	< 4 = _	320		
1. Poa pratensis 2. Elymus repens 2. Elymus repens 3. Bromus tectorum 2. Elymus repens 3. Bromus tectorum 2. Elymus repens 3. Bromus tectorum 4.		adius)	1			•	2.2	< 5 = _	100		
3. Bromus tectorum 20						-			435	(B)	
4.				_				_		(-)	
5.					UPL				143		
6.						Hydrophytic V	egetation Indicat	ors:			
8.						1 - Rapid	Test for Hydroph	ytic Vegeta	ation		
9.			0	0.0%		2 - Domin	ance Test is > 50)%			
10			0	0.0%_		3 - Preval	ence Index is ≤3	.0 ¹			
85 = Total Cover Problematic Hydrophytic Vegetation¹ (Explain) 1. 0 1 1 Indicators of hydric soil and wetland hydrology must be present. 2. 0 = Total Cover Hydrophytic Vegetation Present? Wegetation Present? Yes No ● Remarks: Upland vegetation includes a dominance of Poa pratensis, Elymus repens, and Bromus tectorum. Only 20 percent dominant hydrophytic vegetation and a						4 - Morph	ological Adaptati	ons ¹ (Prov	ide suppor	ting	
Woody Vine Stratum (Plot size: 30 Foot Radius) 1.	10							-	•		
1	Woody Vine Stratum (Plot size:	30 Foot Radius	85	= Total Co	ver	1 Indicators of		_			
2	1		0			be present.					
% Bare Ground in Herb Stratum 15 Remarks: Upland vegetation includes a dominance of Poa pratensis, Elymus repens, and Bromus tectorum. Only 20 percent dominant hydrophytic vegetation and a											
% Bare Ground in Herb Stratum 15 Present? Yes No • Remarks: Upland vegetation includes a dominance of Poa pratensis, Elymus repens, and Bromus tectorum. Only 20 percent dominant hydrophytic vegetation and a			0	= Total Co	ver						
Upland vegetation includes a dominance of Poa pratensis, Elymus repens, and Bromus tectorum. Only 20 percent dominant hydrophytic vegetation and a	% Bare Ground in Herb Stratum	15					Yes O No	ledot			
	Remarks:										
		ance of Poa pratensis	, Elymus repens	s, and Brom	us tectorum	n. Only 20 perce	ent dominant hydr	ophytic ve	getation ar	nd a	

US Army Corps of Engineers

Soil Sampling Point: DP-1U

	ription: (Describe to	the depth ne				onfirm the	absence of indicator	rs.)
Depth (inches)	Matrix Color (moist)	%	Red Color (moist)	ox Featu %	res _Tvpe 1	Loc2	Texture	Remarks
0-12	7.5YR 3/2	100	COIOI (IIIOISL)	-70	IADE	LUC-	Silt Loam	5% cobble
							Silt Loain	
12+	rocks		-					
							-	
1Type: C=Co	oncentration. D=Depletion	n RM=Reduc	red Matrix CS=Cover	ed or Coat	ed Sand Gr	ains 2l oca	ation: PL=Pore Lining.	M=Matrix
	Indicators: (Applicat					allis -Loca		roblematic Hydric Soils ³ :
Histosol		ne to an LKr	Sandy Gleyed		,			<u>-</u>
	ipedon (A2)		Sandy Redox (1 cm Muck (A	e Redox (A16) (LRR F, G, H)
Black His			Stripped Matri				Dark Surface	
	n Sulfide (A4)		Loamy Mucky	` '	1)		=	epressions (F16)
	Layers (A5) (LRR F)		Loamy Gleyed	-	-			utside of MLRA 72 and 73)
	ck (A9) (LRR F,G,H)		Depleted Matr	•	-,		Reduced Vert	•
	Below Dark Surface (A1	1)	Redox Dark Su	` ')		Red Parent M	• •
Thick Da	rk Surface (A12)		Depleted Dark				=	Dark Surface (TF12)
Sandy M	uck Mineral (S1)		Redox depress	sions (F8)			_ '	n in Remarks)
2.5 cm M	lucky Peat or Peat (S2) (LRR G, H)	High Plains De	pressions	(F16)		_ ` `	ophytic vegetation and wetland
	cky Peat or Peat (S3) (LF		(MLRA 72	and 73 o	f LRR H)			e present, unless disturbed or problemation
Restrictive I	_ayer (if present):							· · · · · · · · · · · · · · · · · · ·
Type:	ayer (ii present).							
Depth (in	rhec):						Hydric Soil Presen	it? Yes O No 💿
Remarks:	circo)i							
			ata form is revised	from Gre	eat Plains	Regional S	upplement Version 2	.0 to include the NRCS Field
THUICALOIS OF	Hydric Soils, Version	0.1, 2017.						
Hydrolog	V							
	drology Indicators:						C	. d:k (::-:
•	•			al. A				ndicators (minimum of two required)
	licators (minimum of o	one required						Soil Cracks (B6)
	Water (A1)		Salt Crust (E	•			Sparsely	y Vegetated Concave Surface (B8)
High Wa	iter Table (A2)		Aquatic Inve	rtebrates	(B13)		Drainag	e Patterns (B10)
Saturation	on (A3)		☐ Hydrogen Si	ılfide Odo	r (C1)		Oxidize	d Rhizospheres on Living Roots (C3)
Water M	arks (B1)		Dry Season	Water Tab	le (C2)		(w	here tilled)
Sedimen	t Deposits (B2)		Oxidized Rhi	zospheres	on Living F	Roots (C3)	☐ Crayfish	Burrows (C8)
Drift dep	oosits (B3)		(where	not tilled)		Saturati	on Visible on Aerial Imagery (C9)
Algal Ma	t or Crust (B4)		Presence of	Reduced I	ron (C4)		Geomor	phic Position (D2)
☐ Iron Dep	oosits (B5)		☐ Thin Muck S	urface (C7	')		FAC-net	utral Test (D5)
Inundati	on Visible on Aerial Imag	erv (B7)	Other (Expla	•	•			eave Hummocks (D7) (LRR F)
_	tained Leaves (B9)	,, (,	Other (Explo	iii iii itteiii	uno)			(= 1, (= 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
	. ,							
Field Observ		O No ●	Depth (inc	hac):				
Surface Wate			= op (_		
Water Table F		O No 🖲	Depth (inc	hes):		Wetl	and Hydrology Prese	nt? Yes O No 💿
Saturation Pre (includes capi		O No 💿	Depth (inc	hes):		Wetie	and riyurology Frese	int: les C NO C
	corded Data (stream	gauge, mon	tor well, aerial pho	tos, prev	ious inspe	ections), if	available:	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,	, ,-	- , , ,	- ,,		
Remarks:								
Soils were d	ry throughout. No pri	mary or seco	ondary indicators w	ere pres	ent.			
	,	, 550	,		-			

WETLAND DETERMINATION DATA FORM - Great Plains Region

roject/Site: Kindsfater		City/County:	Yellowstone	e	Samp	ling Date:	22-Jul-19
pplicant/Owner: MDT			State:	: MT S	Sampling Point:	ļ	DP-1W
nvestigator(s): Cindy Hoschouer, Tanner Traxler		Section, To	wnship, Ra	ange: S 6	T 2S	R 25E	
Landform (hillslope, terrace, etc.): Terrace		Local relief (concave, c	convex, none): cor	ncave	Slope:	0.5 % / 0.3
ubregion (LRR): LRR F		5.693229		Long.: -108.693	3454	Date	um: WGS84
oil Map Unit Name: Larim gravelly loam, 15 to 35				-	classification:		-
e climatic/hydrologic conditions on the site typic		-2 Yes	. ● No C		ain in Remarks		:u
				(=: :::0) =::-		Yes 💿	No O
Are Vegetation, Soil, or Hydrol				lormal Circumstan	-		NO C
Are Vegetation, Soil, or Hydrol Summary of Findings - Attach site			•	eded, explain any a		•	eatures etc
				acions, cians			
	lo 🔾		Sampled A				
	o O	within	a Wetland	_{d?} Yes 💿 No 🗆)		
, ,,	<u> </u>						
Remarks: Data point moved slightly in 2019. Data point wa							
VEGETATION - Use scientific name	s of plants	Dominant —Species? _	FWS Re	gion: GP			
(Plot size: 20 Foot Padius)		e Rel.Strat.	Indicator	Dominance Test	worksheet:		
<u>Tree Stratum</u> (Plot size: 30 Foot Radius)	<u>% Cover</u>	r_Cover	Status	Number of Domina			- (4)
1		<u> </u>		That are OBL, FAC	:W, or FAC:		2 (A)
2	0	<u> </u>		Total Number of D			(2)
4.		<u> </u>		Species Across All	Strata:		3 (B)
		= Total Cov	ver	Percent of domi	•		
Sapling/Shrub Stratum (Plot size: 15 Foot Radiu			, c.	That Are OBL, F	ACW, or FAC:	66.	.7% (A/B)
1. Rosa woodsii	2	✓ 100.0%	FACU	Prevalence Inde	x worksheet:		
2	0	0.0%		Total % Co	over of: M	1ultiply by:	·
3				OBL species	35×	(1 = _	35
4		0.0%		FACW species	50x	(2 =	100
5				FAC species	15 x	3 = _	45
(District Foot Padius)	2	= Total Cov	/er	FACU species	2x	4 = _	8
Herb Stratum (Plot size: 5 Foot Radius)		1 40 00/		UPL species	x	5 = _	0
Juncus balticus Carex lasiocarpa	25	✓ 40.0% ✓ 35.0%	FACW OBL	Column Totals	:102 ((A) _	188 (B)
2		15.0%	FAC	Prevalence	Index = B/A =	1.5	343
Sonchus arvensis Lepidium latifolium		5.0%	FACW		-		715
5. Agrostis stolonifera		4.0%	FACW	Hydrophytic Veg	etation Indicat	ors:	
6. Calamagrostis canadensis	1	1.0%	FACW	1 - Rapid Te	st for Hydroph	ytic Vegeta	ation
7.					nce Test is > 50		
8. 9.				✓ 3 - Prevalen	ce Index is ≤3	.0 ¹	
10.				4 - Morphol	ogical Adaptation	ons ¹ (Prov	ide supporting
	0				:marks or on a s : Hydrophytic V	•	•
(Planet and 20 Foot Poding	100	= Total Cov	/er			_	
Woody Vine Stratum (Plot size: 30 Foot Radius				Indicators of be present.	hydric soil and	wetland h	ydrology must
1 2.		Ц		-			
۷.		L		Usalvanhsatia			
				Hydrophytic			
	0	= Total Cov	VEI	Vegetation	v (a)	\bigcirc	
% Bare Ground in Herb Stratum 0	0	= Total Co	vei	Vegetation Present?	Yes • No	\circ	

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Soil Sampling Point: DP-1W

Profile Desc	cription: (De	scribe to t	the depth n	eeded to documen	t the indi	cator or co	nfirm the	absence of indicators.)
Depth		Matrix			dox Featu			
(inches)	Color (<u>%</u>	Color (moist)	%	Tvpe 1	Loc ²	Texture Remarks
0-4	10YR	5/2						Sand
4-10	10YR	5/2		7.5YR 4/6	10	C	M	Sand
10+	rock							
1Type: C=Co	oncentration. I	D=Depletio	n. RM=Redu	ced Matrix, CS=Cover	ed or Coat	ed Sand Gra	ins ² Loca	ation: PL=Pore Lining. M=Matrix
Hydric Soil	Indicators:	(Applicab	le to all LR	Rs, unless otherwis	se noted.)		Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)			Sandy Gleyed	Matrix S4			1 cm Muck (A9) (LRR I, J)
Histic Ep	oipedon (A2)			✓ Sandy Redox	. ,			Coastal Prairie Redox (A16) (LRR F, G, H)
Black His	. ,			Stripped Matri	. ,			Dark Surface (S7) (LRR G)
_ ′ ′	n Sulfide (A4)			Loamy Mucky	•	•		High Plains Depressions (F16)
	d Layers (A5) (ck (A9) (LRR I			Loamy Gleyed Depleted Mate	•	2)		(LRR H outside of MLRA 72 and 73)
	Below Dark S		1)	Redox Dark S	. ,	١		Reduced Vertic (F18)
	irk Surface (A1		-/	Depleted Dark	, ,			Red Parent Material (TF2)
	uck Mineral (S	•		Redox depres	-	,		✓ Very Shallow Dark Surface (TF12)✓ Other (Explain in Remarks)
2.5 cm M	lucky Peat or	Peat (S2) (LRR G, H)	High Plains D	epressions	(F16)		³ Indicators of hydrophytic vegetation and wetland
5 cm Mu	cky Peat or Pe	eat (S3) (LR	RR F)	(MLRA 72	and 73 o	f LRR H)		hydrology must be present, unless disturbed or problematic.
Restrictive I	Layer (if pre	sent):						
Type:	, (p	,-						
Depth (in	ches):							Hydric Soil Present? Yes ● No ○
Remarks:	, .							•
	ith prominer	nt redov co	oncentratio	ns beginning at 4".				
Sandy Son W	iai prominci	it redox et	oricci ili alio	ns beginning at 1.				
Hydrolog	ıy							
Wetland Hy	drology Indi	icators:						Secondary Indicators (minimum of two required)
_			one require	d; check all that ap	nlv)			Surface Soil Cracks (B6)
	Water (A1)	illinaill or c	one require	Salt Crust (I				Sparsely Vegetated Concave Surface (B8)
	ater Table (A2)		Aquatic Inve	,	(B13)		Drainage Patterns (B10)
Saturation	•	,		Hydrogen S		. ,		Oxidized Rhizospheres on Living Roots (C3)
	larks (B1)			Dry Season		` '		
	nt Deposits (B	2)		= '		on Living R	nots (C3)	(where tilled) Crayfish Burrows (C8)
	posits (B3)	-,			not tilled	_	0010 (00)	Saturation Visible on Aerial Imagery (C9)
	at or Crust (B4	1)		Presence of		=		Geomorphic Position (D2)
	posits (B5)	,		Thin Muck S		. ,		FAC-neutral Test (D5)
Ι = '	ion Visible on	Aerial Imac	nery (B7)	Other (Expla	•	•		Frost Heave Hummocks (D7) (LRR F)
	tained Leaves		gery (D7)		alli ili Kelli	ains)		Trost reave Hammoots (57) (ERRT)
		(65)						
Field Observ		Yes (O No @	Donth (inc	choc):			
Surface Wate								
Water Table I		Yes (O No @	Depth (inc	ches):		Moti	and Hydrology Present? Yes No
Saturation Pro (includes capi		Yes (○ No	Depth (inc	ches):		. Well	and nydrology Present? Tes S NO S
		(stream	gauge, mor	nitor well, aerial ph	otos, prev	ious inspe	ctions), if	available:
Remarks:								
	sonal water	in portion	ns of this we	etland. Drains to th	e south.	southeast	Soils likely	y saturated earlier in the year.
					20.7			,

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Kindsfater			City/County: Y	ellowstone	غ	Samp	oling Date: 22-Ju	l-19
Applicant/Owner: MDT				State:	. MT S a	ampling Point:	DP-2	2U
Investigator(s): Cindy Hoschouer, Tann	ner Traxler		Section, Tow	nship, Ra		T 2S	R 25E	
Landform (hillslope, terrace, etc.):	Slope		Local relief (c	oncave, c	convex, none): con	cave	Slope: 1.0	%/0.6_°
Subregion (LRR): LRR F		Lat.: 45	.414276		Long.: -108.4130	014	Datum: ∨	/GS84
Soil Map Unit Name: Wanetta clay loa	am, 0 to 1% slopes	5			NWI c	classification:	Not Mapped	
re climatic/hydrologic conditions on	the site typical for	this time of year?	? Yes	● No C	(If no, expla	in in Remarks	·.)	
Are Vegetation, Soil	, or Hydrology [significantly	disturbed?	Are "N	ormal Circumstanc	es" present?	Yes 💿 No	\circ
Are Vegetation, Soil	, or Hydrology	naturally pro	blematic?	(If nee	eded, explain any a	nswers in Ren	narks.)	
Summary of Findings - At	tach site mar	showing sa	mpling po	int loc	ations, transc	ects, impo	rtant featu	res, etc.
Hydrophytic Vegetation Present?	Yes O No 🗨)	Is the S	ampled A	roa			
Hydric Soil Present?	Yes O No 🗨)		-	_{I?} Yes O No 💿)		
Wetland Hydrology Present?)	within a	wetland	, res e no e				
Remarks: The sample point is located 10 feet VEGETATION - Use scient			· 		gion: GP			
VEGETATION - OSE SCIENT			_Species? _		Dominance Test	workshooti		
Tree Stratum (Plot size: 30 Foot	: Radius)	Mosolute <u>% Cover</u>		ndicator Status				
1					Number of Domina That are OBL, FACV		1	(A)
2					Tatal Name to a confin	t t -		
3					Total Number of Do Species Across All S		3	(B)
4								
Sapling/Shrub Stratum (Plot size:	15 Foot Radius)	0	= Total Cove	er	Percent of domin That Are OBL, FA		33.3%	_ (A/B)
1 Populus deltoides	,	5	✓ 100.0%	FAC	Dravelance Index	· ····aulsahaatı		
2.			0.0%	17.0	Prevalence Index		Aultiply by	
3.			0.0%		Total % Co		1 <u>ultiply by:</u> (1 = 0	_
4.			0.0%		FACW species		$\begin{array}{cccc} \mathbf{c} & 1 & 0 & \\ \mathbf{c} & 2 & 0 & \\ \end{array}$	_
5.		0	0.0%				3 = 15	_
		5	= Total Cove	er	FAC species		3 = <u>15</u> 4 = <u>100</u>	_
<u>Herb Stratum</u> (Plot size: 5 Foot R	ladius)				FACU species	ГΛ	270	-
1. Bromus tectorum		40	✓ 50.6%	UPL	UPL species	•	•	-
2. Melilotus officinalis			25.3%	FACU	Column Totals:	<u>84</u> ((A) <u>385</u>	_ (B)
				UPL	Prevalence I	ndex = B/A =	_4.583_	
				FACU	Hydrophytic Vege	tation Indicat	ors:	
6 Canyolyulus anyonsis		1		UPL	1 - Ranid Tes	t for Hydronh	ytic Vegetation	
7				UPL UPL		ce Test is > 50		
8 0: 11:				UPL	=	ce Index is ≤3.		
0				UPL	4 - Morpholo	gical Adantati	ons ¹ (Provide su	nnortina
10.		0	0.0%				separate sheet)	pportung
		79	= Total Cove	er	Problematic	Hydrophytic V	egetation 1 (Expl	ain)
Woody Vine Stratum (Plot size: _					¹ Indicators of h be present.	ydric soil and	wetland hydrolo	ogy must
1 2.		_	<u> </u>		-			
۷			Ц		Hydronbytic			
% Bare Ground in Herb Stratum	_5	0	= Total Cove	er	Hydrophytic Vegetation Present?	Yes O No	•	
Remarks:					-			
This sample point is in an upland w	ith a dominance of	f UPL and FACU ve	egetation. 10%	of the so	oil surface is covere	d in litter.		

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Soil Sampling Point: DP-2U

Profile Description: (Describe to the dept			confirm the	absence of indicator	rs.)
Depth Matrix (inches) Color (moist) %	Color (moist)	ox Features	Loc2	Texture	Remarks
0-14 10YR 4/3				Silt Loam	cobbles, ants
			-		
1Type: C=Concentration. D=Depletion. RM=R	educed Matrix, CS=Covere	ed or Coated Sand G	rains ² Loca	ation: PL=Pore Lining.	M=Matrix
Hydric Soil Indicators: (Applicable to all	LRRs, unless otherwise	e noted.)		Indicators for P	roblematic Hydric Soils 3:
Histosol (A1)	Sandy Gleyed I			1 cm Muck (A	A9) (LRR I, J)
Histic Epipedon (A2)	Sandy Redox (•			e Redox (A16) (LRR F, G, H)
Black Histic (A3)	Stripped Matrix	` '		=	(S7) (LRR G)
☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F)	Loamy Mucky I				Depressions (F16)
1 cm Muck (A9) (LRR F,G,H)	Loamy Gleyed Depleted Matri	` ,		_ `	utside of MLRA 72 and 73)
Depleted Below Dark Surface (A11)	Redox Dark Su	` '		Reduced Vert	` ,
Thick Dark Surface (A12)	Depleted Dark	, ,		Red Parent M	Dark Surface (TF12)
Sandy Muck Mineral (S1)	Redox depress	ions (F8)		_ `	n in Remarks)
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains De	pressions (F16)			rophytic vegetation and wetland
5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72	and 73 of LRR H)			present, unless disturbed or problemation
Restrictive Layer (if present):					
Туре:					0 0
Type:				Hydric Soil Preser	nt? Yes O No 🖲
Depth (inches):		from Great Plains	Regional S		
Depth (inches):		from Great Plains	Regional S		
Depth (inches):		from Great Plains	Regional S	Supplement Version 2	2.0 to include the NRCS Field
Depth (inches):	17.		Regional S	Secondary In	.0 to include the NRCS Field Indicators (minimum of two required
Depth (inches):	uired; check all that app	oly)	Regional S	Secondary Ir	dicators (minimum of two required
Depth (inches):	uired; check all that app	oly)	Regional S	Secondary Ir Surface Sparsel	dicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8)
Depth (inches): Remarks: lydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requirement) Surface Water (A1)	uired; check all that app Salt Crust (B	oly) 11)	Regional S	Secondary Ir Surface Sparsel Drainage	ndicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10)
Depth (inches): Remarks: lydric soil indicators were not present. The dicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestrance Water (A1) High Water Table (A2)	uired; check all that app Salt Crust (B Aquatic Inve	oly) 11) rtebrates (B13)	Regional S	Secondary Ir Surface Sparsel Drainac Oxidize	dicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3)
Depth (inches): Remarks: lydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requested Surface Water (A1) High Water Table (A2) Saturation (A3)	uired; check all that app Salt Crust (B Aquatic Inve	oly) 111) rtebrates (B13) Ilfide Odor (C1)		Secondary Ir Surface Sparsel Drainag Oxidize	ndicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestions water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	uired; check all that app Salt Crust (B Aquatic Inve	oly) 111) rtebrates (B13) Ilfide Odor (C1) Water Table (C2)		Secondary Ir Secondary Ir Surface Sparsel Drainac Oxidize (w	dicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: dydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	uired; check all that app Salt Crust (B Aquatic Inve	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfish	andicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8)
Depth (inches): Remarks: Hydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: Hydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift deposits (B3)	uired; check all that app Salt Crust (B Aquatic Inve	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4)		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfish Saturat Geomo	e.0 to include the NRCS Field Indicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9)
Depth (inches): Remarks: lydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion with the second secon	uired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Oxidized Rhi: (where I Presence of I	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4)		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomoi	andicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ye Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) n Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2)
Depth (inches): Remarks: lydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requested 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)	uired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Oxidized Rhi: (where I Presence of I	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7)		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomoi	andicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5)
Depth (inches):	uired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Oxidized Rhi: (where I Presence of I	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7)		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomoi	andicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: dydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requirements) 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:	uired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Oxidized Rhi: (where I Presence of I	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks)		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomoi	dicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: Iydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion of 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: Surface Water Present? Yes No	Jired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi (where I Presence of I Thin Muck Su Other (Expla	oly) 11) rtebrates (B13) ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):		Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomoi	adicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: dydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requirement of the primary Indicators (Mater Marks (B1) 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: Surface Water Present? Yes No.	Jired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi: (where I Presence of I Thin Muck St Other (Expla	oly) 11) rtebrates (B13) Ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes):	Roots (C3)	Secondary Ir Surface Sparsel Drainag Oxidize (w Crayfist Saturat Geomoi	dicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rphic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: dydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion of the second of the	Jired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi (where I Presence of I Thin Muck Su Other (Expla	oly) 11) rtebrates (B13) ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes): hes):	Roots (C3)	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	adicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: lydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion of the second of the	Jired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi (where I Presence of I Thin Muck Su Other (Expla	oly) 11) rtebrates (B13) ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes): hes):	Roots (C3)	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	adicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches): Remarks: Rydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: Rydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion of 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: Surface Water Present? Water Table Present? Yes Notes Notes (B4) Notes Saturation Present? Notes Notes (B4) Prescribe Recorded Data (stream gauge, 1)	Jired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi (where I Presence of I Thin Muck Su Other (Expla	oly) 11) rtebrates (B13) ilfide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes): hes):	Roots (C3)	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	adicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Depth (inches): Remarks: dydric soil indicators were not present. The ndicators of Hydric Soils, Version 8.1, 20: dydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one requestion of the second of the	Jired; check all that app Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi (where I Presence of I Thin Muck Si Other (Expla	oly) 11) rtebrates (B13) Iffide Odor (C1) Water Table (C2) zospheres on Living not tilled) Reduced Iron (C4) urface (C7) in in Remarks) hes): hes): hes): tos, previous insp	Roots (C3)	Secondary Ir Surface Sparsel Drainac Oxidize (w Crayfish Saturat Geomo FAC-ne Frost H	adicators (minimum of two required Soil Cracks (B6) y Vegetated Concave Surface (B8) ge Patterns (B10) d Rhizospheres on Living Roots (C3) where tilled) in Burrows (C8) ion Visible on Aerial Imagery (C9) rephic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Kindsfater		c	city/County:	Yellowstone	2	Samp	ling Date:	22-Jul-19
Applicant/Owner: MDT				State:	: _MT \$	Sampling Point:	D	P-2W
investigator(s): Cindy Hoschouer, Tanner Traxle	er		Section, To	wnship, Ra	nge: S 6	T 2S	R 25E	
Landform (hillslope, terrace, etc.): Excavate	ed Depression		Local relief	(concave, c	convex, none): CO	ncave	Slope:	1.0 % / 0.6 °
Gubregion (LRR): LRR F		Lat.: 45.	.414297		Long.: -108.41	2870	Datur	n: WGS84
oil Map Unit Name: Wanetta clay loam, 0 to	1% slones					classification:	 Not Manned	
e climatic/hydrologic conditions on the site		time of vear?	? Yes	o No C		lain in Remarks		
.,		significantly of		Are "N	ormal Circumstar		Yes 💿	No O
		naturally pro			eded, explain any	•		
Summary of Findings - Attach	_			•	, , ,		•	atures, etc.
Hydrophytic Vegetation Present? Yes								
Hydric Soil Present? Yes	_			Sampled A				
Wetland Hydrology Present?			withir	a Wetland	_{l?} Yes 🖲 No 🤇)		
Remarks:								
Sample point is located within Cell 14.								
VEGETATION - Use scientific n	ames of pla	ınts	Dominant	FWS Re	gion: GP			
		Absolute	_Species? Rel.Strat.	Indicator	Dominance Tes	t worksheet:		
Tree Stratum (Plot size: 30 Foot Radius		% Cover	Cover	Status	Number of Domir			
1			<u> </u>		That are OBL, FA	CW, or FAC:	2	(A)
2. 3.		0	<u> </u>		Total Number of I	Dominant		
4.			<u> </u>		Species Across Al	l Strata:	2	(B)
			= Total Co		Percent of dom	inant Species		
Sapling/Shrub Stratum (Plot size: 15 Foot	Radius)	0	- 10tai C0	vei	That Are OBL, F		100.0	0% (A/B)
1. Populus deltoides		70	1 00.0%	FAC	Prevalence Inde	ex worksheet:		
2		0	0.0%		Total % C		fultiply by:	
3		0	0.0%		OBL species			67
4					FACW species	33×	2 =	66
5			0.0%		FAC species	70x	3 =2	210
(District Cost Radius		70	= Total Co	ver	FACU species	o ×	4 =	0
Herb Stratum (Plot size: 5 Foot Radius	.)		4 .=		UPL species	x	5 =	0
2			✓ 65.0% 15.0%	FACW	Column Totals	s: <u>170</u> ((A)	<u>в (в)</u>
3. Poa palustris		- 12	13.0%	FACW	Prevalence	Index = B/A =	2.01	8
4. Salix lutea			5.0%	FACW				
5. Schoenoplectus acutus			2.0%	OBL	Hydrophytic Ve	getation Indicat	ors:	
6.		•	0.0%			est for Hydroph		ion
7. 8.						nce Test is > 50		
8. 9.			0.0%			nce Index is ≤3		
10.			0.0%		4 - Morphol	logical Adaptati emarks or on a s	ons ¹ (Provid	e supporting
			= Total Co	vor		c Hydrophytic V	•	-
Woody Vine Stratum (Plot size: 30 Foot	Radius 1	100	- Total Co	VCI			•	
		0			be present.	hydric soil and	wetiand ny	arology must
1 2.			<u> </u>					
۷۰					Hydrophytic			
% Bare Ground in Herb Stratum 0		0	= Total Co	ver	Vegetation	Yes • No	\cap	
% bare Ground in Herb Stratum 0					Present?	res 🙂 No		
Remarks:								
Plot has a dominance of hydrophytic vegeta	ation.							

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Soil Sampling Point: DP-2W

Depth (inches)	Color (m	Matrix noist)	%	Color (moist)	dox Featu <u>%</u>	_Tvpe ¹	Loc ²	Texture	Remarks
0-8	L0YR	5/2	100					Clay Loam	2" cobbles
8+	rock								
				-				-	
									_
					-			-	
		•					ains ² Loca	ation: PL=Pore Lining. M	
	ators: (Applicable	to all LRRs	, unless otherwis)			blematic Hydric Soils ³ :
Histosol (A1) Histic Epipedo	n (A2)			Sandy Gleyed Sandy Redox				1 cm Muck (A9)	
Black Histic (A				Stripped Matri	. ,			Dark Surface (S	Redox (A16) (LRR F, G, H)
Hydrogen Sulfi	•			Loamy Mucky	` '	·1)		High Plains Dep	
Stratified Laye	rs (A5) (L	RR F)		Loamy Gleyed	Matrix (F	2)			side of MLRA 72 and 73)
1 cm Muck (A9				Depleted Mati	` ,			Reduced Vertic	(F18)
Depleted Below				Redox Dark S	` '	•		Red Parent Mat	rerial (TF2)
Thick Dark Sur Sandy Muck M	•	,		Depleted Dark		F7)		= '	ark Surface (TF12)
2.5 cm Mucky	•	•	R G. H)	High Plains De	` ,	(F16)		Other (Explain	•
5 cm Mucky Pe		. , .			and 73 o	. ,			ohytic vegetation and wetland resent, unless disturbed or problemation
estrictive Layer	(if prese	ent):		<u> </u>				, 3, .	<u> </u>
Type:	(p. cs.								
Depth (inches):								Hydric Soil Present	? Yes • No O
Remarks:	-							I	
his data form is	revised f	rom Great	Plains Regi	onal Sunnlement	Version	2 0 to incl	ude the NE	CS Field Indicators of	Hydric Soils, Version 8.1, 2017.
								and wetland hydrolog	
lydrology									
Wetland Hydrolo	gy Indica	ators:						Secondary Ind	icators (minimum of two required)
Primary Indicato	rs (minir	mum of one	required;	check all that ap	ply)			Surface S	oil Cracks (B6)
Surface Water	(A1)			Salt Crust (I	311)			Sparsely \	/egetated Concave Surface (B8)
High Water Ta	able (A2)			Aquatic Inve	ertebrates	(B13)		Drainage	Patterns (B10)
Saturation (A3	3)			Hydrogen S	ulfide Odo	r (C1)		Oxidized	Rhizospheres on Living Roots (C3)
Water Marks (•			Dry Season				(whe	ere tilled)
Sediment Dep	٠,)		Oxidized Rh	•	_	Roots (C3)		Burrows (C8)
Drift deposits				_	not tilled	-			n Visible on Aerial Imagery (C9)
Algal Mat or C				Presence of		, ,			nic Position (D2)
Iron Deposits	` ,		· (DZ)	Thin Muck S	•	,			ral Test (D5)
Inundation Vis		5 ,	/ (B/)	U Other (Expl	aın ın Rem	arks)		☐ Frost Hea	ve Hummocks (D7) (LRR F)
Water-Stained	•	В9)							
Field Observation		Yes 🔾	No 💿	Donth (inc	shoo).				
Surface Water Pres				Depth (inc	es):		-		
Water Table Preser		Yes 💿	No O	Depth (inc	ches):	6	_ Wetl:	and Hydrology Present	t? Yes 💿 No 🔾
Saturation Present? (includes capillary f		Yes 💿	No 🔾	Depth (inc	ches):	0	_	and riyarology r resem	105 0 110 0
Describe Recorde	ed Data ((stream gau	uge, monito	or well, aerial pho	otos, prev	vious inspe	ections), if	available:	
emarks:									
Soils were satura	ted to th	ne surface a	nd water i	n the soil nit at 6	".				
		.5 5311466 0		Jon pie de 0	•				

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Kindsfater			City/County:	Yellowstone	e	Samp	oling Date: _2	22-Jul-19
Applicant/Owner: MDT				State:	. MT	Sampling Point:	D	P-3U
Investigator(s): Cindy Hoschouer, Tann	ner Traxler		Section, To			T 2S	R 25E	
Landform (hillslope, terrace, etc.): B	 Bench		Local relief	(concave, c	convex, none): no	one	Slope:	0.0 % / 0.0 °
Subregion (LRR): LRR F		 Lat.: 45,	414328		Long.: -108.41	15440		m: WGS84
Soil Map Unit Name: Bew silty clay loa	am O to 1 percent clone		1111020			I classification:		-
re climatic/hydrologic conditions on t			Yes	s • No C		olain in Remarks		
		significantly			ormal Circumsta		Yes 💿	No O
		,				-		140 🗢
Are Vegetation, Soil	, or Hydrology 🔃 r	naturally pro	blematic?	(If nee	eded, explain any	answers in Ren	narks.)	
Summary of Findings - Att		owing sa	mpling p	oint loc	ations, tran	sects, impo	rtant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes O No O		Is the	Sampled A	irea			
Hydric Soil Present?	Yes O No •			•	_{1?} Yes O No (•		
Wetland Hydrology Present?	Yes O No 💿		WILI	l a wenanu				
Remarks:								
Upland sample point paired with we	etland sample point DP-3	3W. Located	between wet	tlands.				
VEGETATION - Use scient	tific names of pla	ants	Dominant	FWS Reg	gion: GP			
	-		Species? Rel.Strat.	Indicator	Dominance Tes	t worksheet:		
<u>Tree Stratum</u> (Plot size: 30 Foot	Radius)	% Cover	Cover	Status	Number of Domir	nant Species		
1. Populus deltoides		15	100.0%	FAC	That are OBL, FA		1	(A)
2			0.0%		Total Number of	Dominant		
3. 4.			0.0%		Species Across Al		2	(B)
4		0		-	Percent of dom	ninant Species		
Sapling/Shrub Stratum (Plot size:	15 Foot Radius)	15	= Total Co	ver	That Are OBL,		50.0	% (A/B)
1		0			Prevalence Inde	ov worksheet:		
2					Total % (Multiply by:	
3					OBL species		_	0
4		_			FACW species			0
5					FAC species			45
		0	= Total Co	ver	FACU species	100		400
Herb Stratum (Plot size: 5 Foot Ra	adius)				UPL species	0		0
			100.0%	FACU	Column Total			445 (в)
2. 3.			0.0%			e Index = B/A =		
4.			0.0%	-				<u>/</u>
5.		0	0.0%	-	Hydrophytic Ve	getation Indicat	ors:	
6.		0	0.0%		1 - Rapid T	est for Hydroph	ytic Vegetat	ion
7.		0	0.0%		2 - Domina	ance Test is > 50)%	
8.		0	0.0%		3 - Prevale	ence Index is ≤3	.0 ¹	
9. 10.					4 - Morpho	ological Adaptati	ons 1 (Provid	e supporting
10						emarks or on a s ic Hydrophytic V	-	=
	20 Fact Bad's a 3	100	= Total Co	ver			•	
Woody Vine Stratum (Plot size: 3					¹ Indicators of be present.	f hydric soil and	wetland hy	drology must
1			<u></u>	-				
2								
Of Board County I to Hook Charles		0	= Total Co	ver	Hydrophytic Vegetation	V O N-		
% Bare Ground in Herb Stratum	0				Present?	Yes O No		
Remarks:								
A dominance of Elymus repens.								

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Soil Sampling Point: DP-3U

Depth .	M					ox Featu						
inches)	Color (mo		<u>%</u>	Color	(moist)	%	Tvpe 1	Loc ²	Text			Remarks fibrous loam
0-14	10YR	3/2							Silt Loam			/, 2" and less
14+	10YR	3/2							Silt Loam		cobbles 10)%
ric Soil Ir Histosol (A Histic Epip Black Histic Hydrogen ! Stratified L 1 cm Muck Depleted B Thick Dark Sandy Muc 2.5 cm Muck	edon (A2) c (A3) Sulfide (A4) .ayers (A5) (LR c (A9) (LRR F,G Selow Dark Surf c Surface (A12) ck Mineral (S1) cky Peat or Peat	R F) i,H) face (A11 at (S2) (L	e to all LRR) RR G, H)	Sa	•	matrix S4 S5) ((S6) Mineral (F Matrix (F2 x (F3) Irface (F6) Surface (I ions (F8) pressions	1) 2) -7) (F16)	ains ² Loca	1 cm	ors for Proble on Muck (A9) (L stal Prairie Rec on Surface (S7) on Plains Depres LRR H outside uced Vertic (F1 Parent Materia of Shallow Dark er (Explain in First of hydrophyl	matic Hydri RR I, J) lox (A16) (LRI (LRR G) ssions (F16) e of MLRA 72 .8) al (TF2) Surface (TF1: Remarks) tic vegetation	R F, G, H) and 73)
	yer (if presei	nt):										
strictive La Type: Depth (inch		nt):							Hydric So	il Present?	Yes O	No •
Type: Depth (inch emarks:	es):		ent. This da	nta form	is revised	from Gre	eat Plains I	Regional S	1 -			
Type: Depth (inch marks: dric soil indi icators of H	es): icators were Hydric Soils, \	not pres		nta form	is revised	from Gre	eat Plains I	Regional S	1 -			
Type: Depth (inch emarks: dric soil indi icators of F	icators were Hydric Soils, \	not pres /ersion 8		ata form	is revised	from Gre	eat Plains I	Regional S	Supplement V	ersion 2.0 to	include the	NRCS Field
Type: Depth (inchemarks: dric soil indicators of Head of the depth of the dep	icators were Hydric Soils, \	not pres /ersion 8	3.1, 2017.				at Plains I	Regional S	Supplement V	ersion 2.0 to	include the	
Depth (inchemarks: dric soil indicators of Fordrology etland Hydriamary Indicators	icators were Hydric Soils, \ Tology Indicators (minim	not pres /ersion 8	3.1, 2017.	; check	all that app	oly)	at Plains I	Regional S	Supplement V	ersion 2.0 to	include the	NRCS Field um of two requir
Depth (inch marks: dric soil indicators of H drology etland Hydr imary Indic	icators were Hydric Soils, \ rology Indicators (minim fater (A1)	not pres /ersion 8	3.1, 2017.	; check a	all that app Salt Crust (B	oly) 11)		Regional S	Supplement V	rersion 2.0 to andary Indica Surface Soil of Sparsely Veg	tors (minimu Cracks (B6) etated Concar	NRCS Field
Depth (inch marks: Iric soil indi icators of H drology stland Hydr mary Indic Surface W High Wate	icators were Hydric Soils, \ rology Indicators (minimater (A1) er Table (A2)	not pres /ersion 8	3.1, 2017.	; check a	all that app Salt Crust (B Aquatic Inve	oly) 11) rtebrates	(B13)	Regional S	Supplement V	rndary Indica Surface Soil (Sparsely Veg Drainage Pat	tors (minimic Cracks (B6) etated Concav terns (B10)	NRCS Field um of two requir ve Surface (B8)
Depth (inch marks: Iric soil indi icators of H drology tland Hydr imary Indic Surface W High Wate Saturation	icators were Hydric Soils, \(\frac{1}{2}\) rology Indicators (minimater (A1) er Table (A2) (A3)	not pres /ersion 8	3.1, 2017.	; check ;	all that app Salt Crust (B Aquatic Inve Hydrogen Su	oly) 11) rtebrates ((B13) · (C1)	Regional S	Supplement V	ersion 2.0 to andary Indica Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz	tors (minimu Cracks (B6) etated Concar terns (B10) zospheres on	NRCS Field um of two requir
Depth (inch marks: dric soil indicators of H drology etland Hydr imary Indic Surface W High Wate Saturation Water Mar	icators were Hydric Soils, \ rology Indicat cators (minim fater (A1) er Table (A2) (A3) rks (B1)	not pres /ersion 8 tors:	3.1, 2017.	; check :	all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N	oly) 11) rtebrates (alfide Odor Water Tab	(B13) - (C1) le (C2)		Supplement V	ersion 2.0 to andary Indica Surface Soil (Sparsely Veg Drainage Pat Oxidized Rhiz (where	tors (minimu Cracks (B6) etated Concar terns (B10) zospheres on tilled)	NRCS Field um of two requir ve Surface (B8)
Depth (inchemarks: dric soil indicators of F drology etland Hydrimary Indic Surface W High Wate Saturation Water Mar Sediment	icators were Hydric Soils, \(\frac{1}{2}\) rology Indicators (minimolater (A1) er Table (A2) (A3) rks (B1) Deposits (B2)	not pres /ersion 8 tors:	3.1, 2017.	; check :	all that app Salt Crust (B Aquatic Inve Hydrogen Su	oly) 11) rtebrates (alfide Odor Water Tab	(B13) - (C1) le (C2)		Supplement V	rersion 2.0 to resion 2.0 to resion 2.0 to resion 2.0 to resion 2.0 to	tors (minimu Cracks (B6) etated Concasterns (B10) zospheres on tilled) ows (C8)	NRCS Field um of two requir ve Surface (B8) Living Roots (C3)
Depth (inchemarks: dric soil indicators of Herdrology etland Hydrimary Indic Surface W High Wates Saturation Water Mar	icators were Hydric Soils, \(\frac{1}{2}\) rology Indicators (minimolater (A1) er Table (A2) (A3) rks (B1) Deposits (B2)	not pres /ersion 8 tors:	3.1, 2017.	; check :	all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Dxidized Rhi	oly) 11) rtebrates (alfide Odor Water Tab	(B13) · (C1) le (C2) on Living F		Supplement V	rersion 2.0 to resion 2.0 to resion 2.0 to resion 2.0 to resion 2.0 to	tors (minimu Cracks (B6) etated Concasterns (B10) zospheres on tilled) ows (C8)	NRCS Field um of two requir ve Surface (B8)
Depth (inch marks: dric soil indi icators of F drology etland Hydr imary Indic Surface W High Wate Saturation Water Mar Sediment Drift depo	icators were Hydric Soils, \(\frac{1}{2}\) rology Indicators (minimolater (A1) er Table (A2) (A3) rks (B1) Deposits (B2)	not pres /ersion 8 tors:	3.1, 2017.	; check ;	all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Dxidized Rhi	oly) 11) rtebrates (Ilfide Odor Water Tab zospheres not tilled)	(B13) - (C1) le (C2) on Living F		Supplement V	ndary Indica Surface Soil of Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burr Saturation Vi	tors (minimu Cracks (B6) etated Concasterns (B10) zospheres on tilled) ows (C8)	NRCS Field um of two requir ve Surface (B8) Living Roots (C3)
Depth (inchemarks: dric soil indicators of Hericators of	icators were Hydric Soils, \ rology Indicators (minimal stators (minimal	not pres /ersion 8 tors:	3.1, 2017.	; check :	all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season \ Oxidized Rhi (where I	oly) 11) rtebrates (Ilfide Odor Water Tab zospheres not tilled)	(B13) · (C1) le (C2) on Living F		Supplement V	ndary Indica Surface Soil of Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burr Saturation Vi	tors (minimum Cracks (B6) etated Concar terns (B10) zospheres on tilled) ows (C8) sible on Aeria Position (D2)	NRCS Field um of two requir ve Surface (B8) Living Roots (C3)
Depth (inchemarks: dric soil indicators of Herdrology etland Hydrology High Wates Saturation Water Mar Sediment Drift depo	icators were Hydric Soils, \(\frac{1}{2}\) rology Indicators (minimulater (A1) er Table (A2) (A3) els (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	not pres /ersion 8 tors: um of o	ne required	; check:	all that app Salt Crust (B Aquatic Inve Hydrogen Su Dry Season N Dxidized Rhi (where I Presence of I	oly) 11) rtebrates (Ifide Odor Water Tab zospheres not tilled) Reduced I	(B13) (C1) le (C2) on Living F ron (C4)		Supplement V	ersion 2.0 to andary Indica Surface Soil of Sparsely Veg Drainage Pat Oxidized Rhiz (where Crayfish Burr Saturation Vi Geomorphic FAC-neutral	tors (minimum Cracks (B6) etated Concar terns (B10) zospheres on tilled) ows (C8) sible on Aeria Position (D2) Test (D5)	NRCS Field um of two requir ve Surface (B8) Living Roots (C3) I Imagery (C9)
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WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Kindsfater	City	//County: _	ellowstone/	1	Samp	oling Date: 22	2-Jul-19
Applicant/Owner: MDT			State:	MT	Sampling Point:	DF	P-3W
Investigator(s): Cindy Hoschouer, Tanner Traxler	s	ection, Tow			T 2S	R 25E	
Landform (hillslope, terrace, etc.): Excavated depression	Lo	ocal relief (concave, c	convex, none): O	oncave	Slope: 1	
Subregion (LRR): LRR F		4272		Long.: -108.4	15480		: WGS84
Soil Map Unit Name: Bew silty clay loam, 0 to 1 percent slop		. 12, 2			I classification:		VV CCC .
re climatic/hydrologic conditions on the site typical for this		Yes	● No ○		plain in Remarks		
	significantly dis			ormal Circumsta	=	-	No O
					-		NO ~
-	naturally proble		-		y answers in Rer	_	
Summary of Findings - Attach site map sh	owing sam	pling po	int loc	ations, tran	sects, impo	rtant fea	tures, etc.
Hydrophytic Vegetation Present? Yes No		Is the S	Sampled A	rea			
Hydric Soil Present? Yes No			-	Yes • No	0		
Wetland Hydrology Present? Yes ● No ○		within	a wetianu	ir 100 - 110			
Remarks:							
Wetland data point along the perimeter of Cell 2, a Phalar	s arundinacea d	ominated w	etland.				
VEGETATION - Use scientific names of pl	ants D	ominant	FWS Reg	gion: GP			
	Absolute R	pecies? _ lel.Strat.	Indicator	Dominance Te	st worksheet:		
<u>Tree Stratum</u> (Plot size: 30 Foot Radius)	% Cover_C	cover	Status	Number of Domi	inant Species		
1	0 _	ļ		That are OBL, F		1_	_ (A)
2. 3.		J		Total Number of	Dominant		
3. 4.		 ا		Species Across A	All Strata:	1_	(B)
T	0 _			Percent of don	ninant Species		
Sapling/Shrub Stratum (Plot size: 15 Foot Radius)	:	= Total Cov	er		FACW, or FAC:	100.00	<u>/6</u> (A/B)
1	0			Prevalence Ind	lex worksheet:		
2						fultiply by:	
3]		OBL species		(1 = ()
4	0]		FACW species	85	(2 = 17	70
5	0 _	J		FAC species	0	3 =)
(District Foot Radius	:	= Total Cov	er	FACU species	0 ,	(4 =()
Herb Stratum (Plot size: 5 Foot Radius)	[•		UPL species	,	· 5 =)
1. Phalaris arundinacea 2.	85	100.0%	FACW	Column Total	s: <u>85</u>	(A) <u>1</u>	70 (B)
3.		0.0%		Prevalence	e Index = B/A =	2	
4.		0.0%			egetation Indicat		_
5.	0	0.0%			•		
6		0.0%			Test for Hydroph	-	on
7. 8.					ance Test is > 50	_	
9.	0 _	0.0%			ence Index is ≤3		
10.	_ 0	0.0%		4 - Morpho	ological Adaptati Remarks or on a	ons¹(Provide separate she	supporting et)
		= Total Cov	er		ic Hydrophytic V	=	-
Woody Vine Stratum (Plot size: 30 Foot Radius_)			-	1 Indicators o	f hydric soil and	wetland hyd	rology must
1	0	٦		be present.	i nyunc son anu	wedana nya	lology must
2.		 1					
		- Total Cov	er	Hydrophytic			
% Bare Ground in Herb Stratum 15		- 10001 001	. .	Vegetation Present?	Yes No	\bigcirc	
Remarks:				Trootile.			
A dominance of hydrophytic vegetation, primarily Phalaris	arundinacea. So	me bare gr	ound due	to loss of annua	I weedy species.		

US Army Corps of Engineers

Soil Sampling Point: DP-3W

Depth	Matrix			Redo			1	_			Damasi
inches)	Color (moist)		Color (n	noist)	<u>%</u>	Tvpe 1	Loc ²		kture	verv rock	Remarks y, earthworms
0-10								Sandy Silt	Loam		
								-			
										_	
										_	
	ncentration. D=Depl		•				ains ² Loca		ore Lining. M=		ia Caila 3.
Histosol (ndicators: (Application (Applic	able to all L	· —	otnerwise dy Gleyed N	-	1			cors for Prob cm Muck (A9)	lematic Hydr	ic Solis :
	pedon (A2)			dy Redox (S					. ,	edox (A16) (LR	R F. G. H)
Black Hist				ped Matrix	•				rk Surface (S7		, 5,,
Hydrogen	Sulfide (A4)		Loar	ny Mucky N	lineral (F	1)		☐ Hig	gh Plains Depi	essions (F16)	
Stratified	Layers (A5) (LRR F)		Loar	ny Gleyed I	Matrix (F2	.)			(LRR H outsi	de of MLRA 7	2 and 73)
	k (A9) (LRR F,G,H)		Depl	leted Matrix	x (F3)			Re	duced Vertic (F18)	-
Depleted	Below Dark Surface	A11)		ox Dark Sui	. ,			Re	d Parent Mate	rial (TF2)	
	k Surface (A12)		= .	leted Dark	`	7)		☐ Ve	ry Shallow Da	rk Surface (TF1	12)
•	ck Mineral (S1)		_	ox depressi	. ,			✓ Ot	her (Explain ir	Remarks)	
	ucky Peat or Peat (S2			Plains Dep		` ,		³ Indicat	ors of hydropl	ytic vegetation	and wetland
5 cm Muc	ky Peat or Peat (S3)	(LRR F)	(MLRA 72	and 73 of	f LRR H)		hydrolo	gy must be pr	esent, unless d	isturbed or probler
rictive La	ayer (if present):										
Гуре:								Usalaia C	eil Drocont?	Y (9)	Na O
	indicators observ						oil profile a	1 -	oil Present?	Yes •	No O
Depth (incl narks: ydric soil uture (inc	indicators observ dicators of Probler						oil profile	1 -			
Depth (incl narks: ydric soil uture (incl Irology	indicators observ dicators of Probler						oil profile a	and if hydro	ology remain	s, hydric soils	s may develop in
Depth (incl narks: ydric soil uture (incl Irology	indicators observed icators of Probler Y rology Indicators:	natic Hydric	Soils - Recer	ntly Devel	oped We		pil profile a	and if hydro	ology remain	s, hydric soils	s may develop in
Depth (incl marks: ydric soil iuture (incl irology land Hyd mary Indi	indicators observed icators of Problem rology Indicators: cators (minimum of the cators)	natic Hydric	Soils - Recer	ntly Develo	oped We		oil profile a	and if hydro	ology remain	s, hydric soils cators (minim Il Cracks (B6)	s may develop in
Depth (incl narks: ydric soil uture (incl Irology land Hyd nary Indic Surface W	indicators observed icators of Problem rology Indicators: cators (minimum ovater (A1)	natic Hydric	Soils - Recer	I that app	ly)	tland).	oil profile a	and if hydro	condary India Surface So Sparsely W	s, hydric soils cators (minim il Cracks (B6) egetated Conca	s may develop in
Depth (incl narks: ydric soil uture (incl Irology Iand Hyd nary India Surface W High Wat	indicators observed icators of Problem y rology Indicators: cators (minimum of Vater (A1)) er Table (A2)	natic Hydric	soils - Recer	I that app	ly) tebrates ((B13)	oil profile a	and if hydro	condary India Surface So Sparsely Vo Drainage P	s, hydric soils cators (minim I Cracks (B6) egetated Conca	s may develop in
Depth (incl narks: ydric soil uture (incl Irology land Hyd nary India Surface W High Wat Saturation	indicators observed icators of Problem rology Indicators: cators (minimum of Vater (A1) er Table (A2) in (A3)	natic Hydric	red; check al	I that app It Crust (Bi	ly) tebrates (lfide Odor	(B13)	oil profile a	and if hydro	condary India Surface So Sparsely Vo Drainage P Oxidized R	cators (minimil Cracks (B6) egetated Conca	s may develop in
Depth (incl narks: ydric soil uture (incl Irology land Hyd nary India Surface W High Wat Saturation Water Ma	indicators observed icators of Problem rology Indicators: cators (minimum of Vater (A1) er Table (A2) in (A3) irks (B1)	natic Hydric	red; check al Sa Aq Hy	I that app It Crust (B: Juatic Inver	ly) 11) tebrates (lfide Odor	(B13) (C1) le (C2)		and if hydro	condary India Surface So Sparsely V Drainage P Oxidized R (wher	cators (minimil Cracks (B6) egetated Conca atterns (B10) hizospheres on the tilled)	s may develop in
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Depth (incl marks: hydric soil future (incl drology land Hyd mary India Surface W High Wat Saturation Water Ma Sediment Drift dept Algal Mat Iron Dept	indicators observed icators of Problem rology Indicators: cators (minimum of Vater (A1) eer Table (A2) in (A3) irks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5)	of one requir	red; check al Sa Aq Hy Or	I that app It Crust (Bi juatic Inver vdrogen Sul y Season V kidized Rhiz (where re esence of F	ly) 11) tebrates (lifide Odor Vater Tab cospheres not tilled) Reduced In	(B13) (C(1) le (C2) on Living F		Sec	condary India Surface So Sparsely W Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra	cators (minimal Cracks (B6) egetated Concaterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) of Test (D5)	s may develop in num of two requir ave Surface (B8) Living Roots (C3)
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Depth (incl narks: ydric soil uture (incl Irology land Hyd nary India Surface W High Wate Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation Water-Sta	indicators observed indicators of Problem indicators of Problem indicators: Cators (minimum of Vater (A1) (A2) (A3) (A3) (A4) (A4) (A4) (A4) (A4) (A4) (A4) (A4	of one requir	red; check al Sa Aq Hy Or	I that app It Crust (Bi juatic Inver vdrogen Sul y Season V kidized Rhiz (where re esence of F	ly) 11) tebrates (lifide Odor Vater Tab cospheres not tilled) Reduced In	(B13) (C(1) le (C2) on Living F		Sec	condary India Surface So Sparsely W Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra	cators (minimal Cracks (B6) egetated Concaterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) of Test (D5)	s may develop in num of two requi ave Surface (B8) Living Roots (C3)
Depth (incl narks: ydric soil uture (incl Irology land Hyd nary India Surface W High Wate Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatic Water-Sta d Observat	indicators observed indicators of Problem indicators of Problem indicators: Cators (minimum of Vater (A1) (A2) (A3) (A3) (A4) (A4) (A4) (A4) (A4) (A4) (A4) (A4	of one requir	red; check al Sa Hy Dr Ox	I that app It Crust (Bi juatic Inver vdrogen Sul y Season V kidized Rhiz (where mesence of F hin Muck Sul ther (Explai	ly) 11) tebrates (lfide Odor Vater Tab cospheres not tilled) Reduced I urface (C7 n in Rema	(B13) (C(1) le (C2) on Living F ron (C4)) arks)		Sec	condary India Surface So Sparsely W Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra	cators (minimal Cracks (B6) egetated Concaterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) of Test (D5)	s may develop in num of two requir ave Surface (B8) Living Roots (C3)
Depth (incl narks: ydric soil uture (incl Irology land Hyd nary India Surface W High Wate Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundatic Water-Sta d Observat	indicators observed dicators of Problem Y rology Indicators: cators (minimum of Vater (A1) er Table (A2) in (A3) in	natic Hydric of one requir nagery (B7)	red; check al Sa Aq Hy Or Or	I that app It Crust (Bi juatic Inver vdrogen Sul y Season V kidized Rhiz (where re esence of F	ly) 11) tebrates (lfide Odor Vater Tab cospheres not tilled) Reduced I urface (C7 n in Rema	(B13) (C(1) le (C2) on Living F		Sec	condary India Surface So Sparsely W Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra	cators (minimal Cracks (B6) egetated Concaterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) of Test (D5)	s may develop in num of two requir ave Surface (B8) Living Roots (C3)
Depth (incl narks: nydric soil iuture (incl iuture (incl	indicators observed dicators of Problem dicators of Problem dicators of Problem dicators: Cators (minimum dicators) dicators: Cators (Minimum dicators) dicators: Cators (Minimum dicators) dicators: Cators (Minimum dicators) dicators (Minimu	of one requir	red; check al Sa Aq Hy Or Or	I that app It Crust (Bi juatic Inver vdrogen Sul y Season V kidized Rhiz (where mesence of F hin Muck Sul ther (Explai	ly) L11) tebrates (lifide Odor Vater Tab cospheres not tilled) Reduced In Inface (C7 n in Rema	(B13) (C(1) le (C2) on Living F ron (C4)) arks)	Roots (C3)	Sec	condary India Surface So Sparsely Vo Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra Frost Heav	cators (minimid Cracks (B6) egetated Concatterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) I Test (D5) e Hummocks (I	s may develop in num of two requires Surface (B8) Living Roots (C3) al Imagery (C9) D7) (LRR F)
Depth (incl marks: hydric soil future (incl drology cland Hyd mary India Surface W High Wat Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation	indicators observed dicators of Problem dicators of Problem dicators of Problem dicators: Cators (minimum of Vater (A1) er Table (A2) n (A3) or	natic Hydric of one requir nagery (B7)	red; check al Sa Aq Hy Dr Ox	I that app Ilt Crust (Biguatic Inver rdrogen Sul y Season V kidized Rhiz (where n esence of F hin Muck Su ther (Explai	ly) 11) tebrates (lfide Odor Vater Tab cospheres not tilled) Reduced I urface (C7 n in Rema	(B13) (C(1)) le (C2) on Living F ron (C4)) arks)	Roots (C3)	Sec	condary India Surface So Sparsely W Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra	cators (minimal Cracks (B6) egetated Concatterns (B10) hizospheres on the tilled) arrows (C8) Visible on Aeric C Position (D2) al Test (D5) e Hummocks (i	s may develop in num of two requires surface (B8) Living Roots (C3) al Imagery (C9) D7) (LRR F)
Depth (incl marks: hydric soil future (incl drology cland Hyd mary India Surface W High Wat Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation Water-Sta d Observation Pre- judes capill	indicators observed dicators of Problem dicators of Problem dicators of Problem dicators: Cators (minimum of Vater (A1) er Table (A2) n (A3) or	nagery (B7) S No S No	red; check al Sa Aq Hy Ox Ox	I that app It Crust (Biguatic Inver rdrogen Sul y Season V didized Rhiz (where n esence of F hin Muck Su ther (Explai	ly) It) Itebrates (Ifide Odor Vater Tab Prospheres In tilled) Reduced In Inface (C7 In in Remains): Ines): Ines):	(B13) (C1) le (C2) on Living F ron (C4)) arks) 3 0 0	Roots (C3)	Sec	condary India Surface So Sparsely Vo Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra Frost Heav	cators (minimid Cracks (B6) egetated Concatterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) I Test (D5) e Hummocks (I	s may develop in num of two requires Surface (B8) Living Roots (C3) al Imagery (C9) D7) (LRR F)
Depth (incl marks: hydric soil future (incl drology cland Hyd mary India Surface W High Wat Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation Water-Sta d Observa face Water er Table Pri uration Presides capill scribe Rec	indicators observed dicators of Problem dicators of Problem dicators of Problem dicators: Cators (minimum of Vater (A1) er Table (A2) er Table (A2) er Table (A2) er Table (B1) er Table (B2) er Crust (B3) er Crust (B4) er Crust (B4) er Crust (B4) er Crust (B5) er Crust (B5) er Crust (B9) er Crust	nagery (B7) S No S No	red; check al Sa Aq Hy Ox Ox	I that app It Crust (Biguatic Inver rdrogen Sul y Season V didized Rhiz (where n esence of F hin Muck Su ther (Explai	ly) It) Itebrates (Ifide Odor Vater Tab Prospheres In tilled) Reduced In Inface (C7 In in Remains): Ines): Ines):	(B13) (C1) le (C2) on Living F ron (C4)) arks) 3 0 0	Roots (C3)	Sec	condary India Surface So Sparsely Vo Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra Frost Heav	cators (minimid Cracks (B6) egetated Concatterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) I Test (D5) e Hummocks (I	s may develop in num of two requires Surface (B8) Living Roots (C3) al Imagery (C9) D7) (LRR F)
Depth (incl marks: hydric soil future (incl drology cland Hyd mary India Surface W High Wat Saturation Water Ma Sediment Drift depo Algal Mat Iron Depo Inundation Water-Sta d Observation Pre- judes capill	indicators observed dicators of Problem dicators of Problem dicators of Problem dicators: Cators (minimum of Vater (A1) er Table (A2) er Table (A2) er Table (A2) er Table (B1) er Table (B2) er Crust (B3) er Crust (B4) er Crust (B4) er Crust (B4) er Crust (B5) er Crust (B5) er Crust (B9) er Crust	nagery (B7) S No S No	red; check al Sa Aq Hy Ox Ox	I that app It Crust (Biguatic Inver rdrogen Sul y Season V didized Rhiz (where n esence of F hin Muck Su ther (Explai	ly) It) Itebrates (Ifide Odor Vater Tab Prospheres In tilled) Reduced In Inface (C7 In in Remains): Ines): Ines):	(B13) (C1) le (C2) on Living F ron (C4)) arks) 3 0 0	Roots (C3)	Sec	condary India Surface So Sparsely Vo Drainage P Oxidized R (wher Crayfish Bu Saturation Geomorphi FAC-neutra Frost Heav	cators (minimid Cracks (B6) egetated Concatterns (B10) hizospheres on the tilled) rows (C8) Visible on Aeric C Position (D2) I Test (D5) e Hummocks (I	s may develop in num of two requin eve Surface (B8) Living Roots (C3) al Imagery (C9) D7) (LRR F)

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Kindsfater		c	City/County:	Yellowstone	Sa Sa	mpling Date: 22-Jul-19
pplicant/Owner: MDT				State:	: MT Sampling Po	int: DP-4U
nvestigator(s): Cindy Hoschouer, Tan	ıner Traxler		Section, To	wnship, Ra	nge: S 6 T 2S	R 25E
Landform (hillslope, terrace, etc.):	Slope		Local relief	(concave, c	convex, none): convex	Slope: 2.0 % / 1.1
ubregion (LRR): LRR F		Lat.: 45.	.695449		Long.: -108.697276	Datum: WGS84
oil Map Unit Name: Bew silty clay lo	nam 0 to 1 percent slo				NWI classification	•n: Not Manned
e climatic/hydrologic conditions on			Ye	s • No C		
Are Vegetation , Soil	, or Hydrology	significantly			ormal Circumstances" presen	
Are Vegetation , Soil ,	, or Hydrology	naturally pro			eded, explain any answers in	
Summary of Findings - At				•	,	•
Hydrophytic Vegetation Present?	Yes O No 💿					<u> </u>
Hydric Soil Present?	Yes O No •			Sampled A		
Vetland Hydrology Present?		withir	ո a Wetland	_{1?} Yes O No 💿		
Remarks:	Yes ○ No ●					
Paired with wetland sample point [DP-4W. Located along	the southweste	ern side of w	etland Cell	3. Moved slightly in 2019.	
VEGETATION - Use scien	tific names of p	olants	DominantSpecies?	FWS Re	gion: GP	
Tree Stratum (Plot size: 30 Foo	t Radius		Rel.Strat.	Indicator	Dominance Test worksheet	:
1 (Plot Size30100		_ % Cover _ 0	Cover	Status	Number of Dominant Species That are OBL, FACW, or FAC:	0 (4)
2				- —	Hidt die Obt, FACVV, or FAC.	(A)
3.		0			Total Number of Dominant	2 (B)
4.					Species Across All Strata:	(B)
Sapling/Shrub Stratum (Plot size:	15 Foot Radius 1	0	= Total Co	ver	Percent of dominant Specie That Are OBL, FACW, or FA	0.00/ (1.15)
4		0				
1 2.					Prevalence Index workshee	
2					Total % Cover of:	Multiply by:
4.					OBL species 0	
5.					FACW species0	
-		0	= Total Co	ver	FAC species 5	200
Herb Stratum (Plot size: 5 Foot I	Radius)				FACU species 70	
1		40	42.1%	FACU	UPL species 20	~ •
2 -			✓ 31.6%	FACU	Column Totals: <u>95</u>	(A) 395 (B)
3. Bromus tectorum		15	15.00/	LIDI		
			15.8%	UPL	Prevalence Index = B/A	A = 4.158
			5.3%	FAC	Prevalence Index = B/A Hydrophytic Vegetation Ind	
5. Descurainia incana		5 5	5.3% 5.3%		Hydrophytic Vegetation Ind	icators:
5. Descurainia incana 6.		5 5 0	5.3% 5.3% 0.0%	FAC	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro	icators:
5. Descurainia incana 6. 7.		5 5 0 0	5.3% 5.3% 0.0%	FAC	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is >	pphytic Vegetation
5. Descurainia incana 6. 7. 8. 9		5 5 0 0	5.3% 5.3% 0.0% 0.0% 0.0%	FAC	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is	pphytic Vegetation > 50% ≤3.0 ¹
5. Descurainia incana 6. 7. 8. 9.		5 5 0 0 0	5.3% 5.3% 0.0% 0.0% 0.0% 0.0%	FAC	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is 4 - Morphological Adap	icators: ophytic Vegetation > 50% ≤3.0¹ tations¹(Provide supporting
5. Descurainia incana 6. 7. 8. 9.		5 0 0 0 0 0	5.3% 5.3% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC UPL	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is	icators: ophytic Vegetation > 50% ≤3.0 ¹ tations ¹ (Provide supporting a separate sheet)
5. Descurainia incana 6. 7. 8.		5 5 0 0 0	5.3% 5.3% 0.0% 0.0% 0.0% 0.0%	FAC UPL	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is 4 - Morphological Adapt data in Remarks or or Problematic Hydrophyti 1 Indicators of hydric soil a	icators: ophytic Vegetation > 50% ≤3.0 ¹ tations ¹ (Provide supporting a separate sheet)
5. Descurainia incana 6. 7. 8. 9. 10. Woody Vine Stratum (Plot size:	30 Foot Radius_)	5 0 0 0 0 0 0	5.3% 5.3% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC UPL	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is 4 - Morphological Adaption data in Remarks or or Problematic Hydrophytic	icators: ophytic Vegetation > 50% ≤3.0¹ tations¹(Provide supporting of a separate sheet) ic Vegetation¹(Explain)
5. Descurainia incana 6. 7. 8. 9. 10. Plot size:	30 Foot Radius_)	5 0 0 0 0 0 0 0 95	5.3% 5.3% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC UPL	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is 4 - Morphological Adapt data in Remarks or or Problematic Hydrophyti 1 Indicators of hydric soil a	icators: ophytic Vegetation > 50% ≤3.0¹ tations¹(Provide supporting of a separate sheet) ic Vegetation¹(Explain)
5. Descurainia incana 6. 7. 8. 9. 10. Woody Vine Stratum (Plot size: 1. 2.	30 Foot Radius_)	5 0 0 0 0 0 0 0 95	5.3% 5.3% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC UPL	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is 4 - Morphological Adapt data in Remarks or or Problematic Hydrophyti 1 Indicators of hydric soil abe present. Hydrophytic Vegetation	icators: ophytic Vegetation > 50% ≤3.0¹ tations¹(Provide supporting a separate sheet) ic Vegetation¹(Explain) and wetland hydrology must
5. Descurainia incana 6. 7. 8. 9. 10. Woody Vine Stratum (Plot size: 1. 2.	30 Foot Radius_)	5 0 0 0 0 0 0 95	5.3% 5.3% 0.0% 0.0% 0.0% 0.0% 0.0% Total Co	FAC UPL	Hydrophytic Vegetation Ind 1 - Rapid Test for Hydro 2 - Dominance Test is > 3 - Prevalence Index is 4 - Morphological Adaptata in Remarks or or Problematic Hydrophyti 1 Indicators of hydric soil abe present. Hydrophytic	icators: ophytic Vegetation > 50% ≤3.0¹ tations¹(Provide supporting of a separate sheet) ic Vegetation¹(Explain)

US Army Corps of Engineers

Soil Sampling Point: DP-4U

Profile Desc	cription: (De		the depth n	eeded to document			nfirm the	absence of indic	cators.)	
Depth (inches)	Color (Matrix moist)	0/2	Color (moist)	lox Featu %	res _Tvpe ¹	Loc2	Texture		Remarks
(inches) 0-4			<u>%</u> _	Color (Illoist)	<u>-70</u>	IVDE	LUC-	Loam		Remarks
	10YR	4/3								20% rocks
0-14	10YR	3/3						Loam		
14+	rock									
	-			-		-		-		
1Type: C=C	oncentration. I	 D=Depletio	n. RM=Reduc	ced Matrix, CS=Covere	ed or Coat	ed Sand Gra	ins ² Loca	ation: PL=Pore Lin	ina. M=M	atrix
, · ·				Rs, unless otherwis						matic Hydric Soils ³ :
Histosol		(ppc		Sandy Gleyed		,			ck (A9) (L	•
	oipedon (A2)			Sandy Redox (lox (A16) (LRR F, G, H)
Black His				Stripped Matri					face (S7)	
Hydroge	en Sulfide (A4)			Loamy Mucky	Mineral (F	1)		High Pla	ins Depres	ssions (F16)
Stratified	d Layers (A5) ((LRR F)		Loamy Gleyed	Matrix (F	2)		(LRR	H outside	e of MLRA 72 and 73)
	ıck (A9) (LRR I			Depleted Matr	ix (F3)			Reduced	Vertic (F1	.8)
	d Below Dark S	-	1)	Redox Dark Su	•			Red Pare	ent Materia	al (TF2)
	ark Surface (A1	,		Depleted Dark		F7)		☐ Very Sha	llow Dark	Surface (TF12)
_ `	luck Mineral (S	•		Redox depress	. ,			Other (E	xplain in F	Remarks)
	Mucky Peat or			☐ High Plains De	•	,				tic vegetation and wetland
5 cm Mu	icky Peat or Pe	eat (S3) (LR	RR F)	(MLRA 72	and 73 c	f LRR H)		hydrology mu	st be pres	ent, unless disturbed or problematic.
Restrictive	Layer (if pre	sent):								
Type: _										0 0
Depth (in	iches):							Hydric Soil Pr	esent?	Yes ○ No •
Remarks:										
Hvdric soil ir	ndicators we	re not pre	sent. This d	ata form is revised	from Gre	eat Plains R	egional S	Supplement Versi	on 2.0 to	include the NRCS Field
	f Hydric Soils						3			
Hydrolog	JY									
Wetland Hy	drology Indi	cators:						Seconda	ry Indica	tors (minimum of two required)
Primary Inc	dicators (min	imum of o	one required	l; check all that app	oly)			Sui	rface Soil (Cracks (B6)
Surface	Water (A1)			Salt Crust (E	311)			Spa	arselv Vea	etated Concave Surface (B8)
High Wa	ater Table (A2)		Aquatic Inve	rtebrates	(B13)				terns (B10)
Saturati	on (A3)	•		Hydrogen Su	ulfide Odo	r (C1)			•	zospheres on Living Roots (C3)
	Marks (B1)			Dry Season					(where	- · · · · · · · · · · · · · · · · · · ·
	nt Deposits (B	2)		Oxidized Rh		. ,	oots (C3)	☐ Cra	yfish Burr	•
	posits (B3)	,			not tilled	_	, ,		-	sible on Aerial Imagery (C9)
	at or Crust (B4	.)		Presence of		=				Position (D2)
	posits (B5)	,		☐ Thin Muck S		` '			C-neutral ⁻	
	ion Visible on	Aprial Imag	any (R7)		•	•				Hummocks (D7) (LRR F)
		_	Jery (D/)	U Other (Expla	IIII III Reili	arks)			ist Heave	Hullinocks (D7) (ERK I)
	Stained Leaves	(B9)								
Field Obser		Vac (○ No ●)						
Surface Wate	er Present?	Yes (_ op (hes):					
Water Table	Present?	Yes (O No 🖲	Depth (inc	hes):		. [v
Saturation Pr		Yes (○ No ●	Depth (inc	hes):		Wetl	and Hydrology P	resent?	Yes ○ No •
(includes cap						davia laana	- 	a vailable.		
Describe Re	ecoruea Data	(stream (yauye, mon	itor well, aerial pho	ios, pre	vious inspe	LUONS), IT	avaliable:		
DawrI										
Remarks:										
Soils were o	dry to 14". N	o primary	or seconda	ry indicators noted.						
l										

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Kindsfater	c	city/County:	Yellowstone	ne Sampling Date: 22-Jul-19				
Applicant/Owner: MDT				State:	: <u>MT</u> S	Sampling Point:	D	P-4W
nvestigator(s): Cindy Hoschouer, Tanner	Traxler		Section, To	wnship, Ra	nge: S 6	T 2S	R 25E	
Landform (hillslope, terrace, etc.): Exc	avated depression		Local relief	(concave, c	convex, none): CO	ncave	Slope:	1.0 % / 0.6 °
ubregion (LRR): LRR F		Lat.: 45.	.695567		Long.: -108.69	7051	Datun	n: WGS84
pil Map Unit Name: Bew silty clay loam	0 to 1 percent slope				NWI	classification:	 Not Manned	-
e climatic/hydrologic conditions on the			Yes	. ● No ○		lain in Remarks		
		significantly			ormal Circumstan		Yes 💿	No O
		,				•		
Are Vegetation ☐ , Soil ☐ , Summary of Findings - Attac	_	naturally pro owing sa		•	eded, explain any ations, trans		•	ntures, etc.
	es ● No ○					,, p		
, , ,	es • No O			Sampled A				
•	es • No O		withir	a Wetland	_{l?} Yes 💿 No 🤇)		
Remarks:								
Sample point within a constructed dep VEGETATION - Use scientifi			Dominant		gion: GP			
		Absolute	Species? Rel.Strat.	Indicator	Dominance Test	t worksheet:		
Tree Stratum (Plot size: 30 Foot Rac		% Cover		Status	Number of Domin	ant Species		
1			<u> </u>		That are OBL, FAC		3	(A)
2			<u> </u>		Total Number of [Dominant		
3			Ц		Species Across All		3	(B)
4					Percent of domi	inant Snecies		
Sapling/Shrub Stratum (Plot size: 15	Foot Radius)	0	= Total Co	ver	That Are OBL, F		100.0	0% (A/B)
1 Salix lutea	,	5	✓ 100.0%	FACW	,			
2.			0.0%	IACVV	Prevalence Inde		· translation	
3.		0	0.0%		Total % C		lultiply by:	^
4.			0.0%		-			0
5.		0	0.0%		FACW species		2 = _1	
-		- <u></u> 5	= Total Co	ver	FAC species			<u>0</u> 8
Herb Stratum (Plot size: 5 Foot Radio	us)				FACU species			75 <u> </u>
1 B		50	✓ 50.0%	FACW	UPL species	-	. •	
		30	30.0%	FACW	Column Totals	s: <u>105</u> ((A) <u>2</u>	259 (B)
		15	15.0%_	UPL	Prevalence	Index = B/A =	2.46	7_
			3.0%	FACW	Hydrophytic Veg	getation Indicat	ors:	
5. Elymus repens 6.			2.0%	FACU	✓ 1 - Rapid Te	est for Hydronb	vtic Voqetat	ion
7			0.0%		✓ 1 - Rapid Te		_	ion
8			0.0%		✓ 3 - Prevaler			
9.			0.0%					
10.			0.0%			logical Adaptati emarks or on a s		
		100	= Total Co	ver	Problemation	c Hydrophytic V	egetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 F					¹ Indicators of be present.	hydric soil and	wetland hyd	drology must
1			Ц					
2				-				
% Bare Ground in Herb Stratum 0		0	= Total Co	ver	Hydrophytic Vegetation Present?	Yes • No	0	
Remarks:								
Remarks:								
Dominance test >50% and Prevalence	Index <3.0.							

 $\label{eq:B-35} \text{MS-Army Corps of Engineers} \\ \text{B-35} \\ \text{*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.}$ US Army Corps of Engineers

Soil Sampling Point: DP-4W

Profile Description	•	the depth nee				nfirm the	absence of indicators.)		
Depth (inches)	Matrix Color (moist)	<u>%</u>	Red Color (moist)	ox Featu _%_	res Tvpe ¹	Loc ²	Texture		Remarks
	OYR 5/2	100	COIOI (IIIOISE)		TVDC	LUC	Silty Clay Loam		Kemurks
	ock						, ,		
			-						
								-	
1Type: C=Concentr	ation. D=Depletion	n. RM=Reduce	d Matrix, CS=Covere	ed or Coat	ted Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=I		
Hydric Soil Indica	tors: (Applicat	le to all LRRs	, unless otherwis	e noted.)		Indicators for Prob	ematic Hydri	ic Soils ³ :
Histosol (A1)			Sandy Gleyed	Matrix S4			1 cm Muck (A9) (LRR I, J)	
Histic Epipedon	. ,		Sandy Redox (•			Coastal Prairie Re	. , .	R F, G, H)
Black Histic (A3	•		Stripped Matrix	` '	-4\		Dark Surface (S7		
Hydrogen Sulfic	` '		Loamy Mucky Loamy Gleyed	-	-		High Plains Depr	` ') d 7 2\
1 cm Muck (A9)	. , . ,		Depleted Matri	•	2)		(LRR H outsic		2 and 73)
	Dark Surface (A1	1)	Redox Dark Su	` ')		Reduced Vertic (I Red Parent Mater	•	
☐ Thick Dark Surf	ace (A12)		Depleted Dark	Surface (F7)		Very Shallow Dar	. ,	2)
Sandy Muck Mir	neral (S1)		Redox depress	ions (F8)			✓ Other (Explain in	•	-/
I — '	eat or Peat (S2) (High Plains De	•	• ,		³ Indicators of hydroph		
5 cm Mucky Pea	at or Peat (S3) (LF	RR F)	(MLRA 72	and 73 c	of LRR H)		hydrology must be pre	sent, unless di	isturbed or problematic.
Restrictive Layer	(if present):								
Туре:							Hydric Soil Present?	Yes •	No O
Depth (inches):							Hydric Soil Present?	res 💌	NO U
Remarks:									
Faint mottles were	observed in 20	18 but were r	not observed in 20	19. This	area has a	modified	soil profile and hydric s	oil indicators	are developing.
Hydrology									
Wetland Hydrolog	y Indicators:						Secondary Indic	ators (minim	um of two required)
Primary Indicator	s (minimum of o	one required;	check all that app	oly)				Cracks (B6)	
✓ Surface Water	(A1)		Salt Crust (B	11)			Sparsely Ve	getated Conca	ve Surface (B8)
✓ High Water Tal	ole (A2)		Aquatic Inve	rtebrates	(B13)		✓ Drainage Pa	atterns (B10)	, ,
✓ Saturation (A3)			Hydrogen Su	ılfide Odo	r (C1)		Oxidized R	izospheres on	Living Roots (C3)
☐ Water Marks (E	31)		Dry Season	Water Tab	ole (C2)		(where	e tilled)	
Sediment Depo			Oxidized Rhi	zospheres	s on Living R	loots (C3)	Crayfish Bu	rows (C8)	
Drift deposits (B3)		(where	not tilled)		Saturation '	isible on Aeria	al Imagery (C9)
Algal Mat or Cr	` ,		Presence of	Reduced 1	Iron (C4)			Position (D2)	
Iron Deposits (,		Thin Muck S	urface (C7	7)		✓ FAC-neutra		
Inundation Visi	ble on Aerial Imag	gery (B7)	Other (Expla	in in Rem	arks)		Frost Heave	Hummocks ([07) (LRR F)
Water-Stained	Leaves (B9)								
Field Observation		· · ·							
Surface Water Prese			Depth (inc	hes):	2	_			
Water Table Present	? Yes	● No ○	Depth (inc	hes):	0	_		v- (a)	No O
Saturation Present? (includes capillary fr	inge) Yes	● No ○	Depth (inc	hes):	0	Wetla	and Hydrology Present?	Yes	NO U
Describe Recorde		gauge, monit	or well, aerial pho	tos, prev	vious inspe	ctions), if	available:		
							<u> </u>		
Remarks:									
About 10% of dat	a point inundate	ed with 2" of	standing water. T	hree prin	nary and th	ree secon	dary indicators observe	i.	
			-	•	•		-		

MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	Project Name: Kindsfater 2.	MDT Project #: STPX-0056(5	<u>66)</u> 3. Control #: <u>5034</u>		
3.	Evaluation Date: 7/22/2019	4. Evaluator(s): C. Hoschoue	er, T. Traxler, C. Seibert 5. We	etland/Site #(s): Kindsfater - cre	eated wetland
6.	Wetland Location(s): Towns	ship <u>2 S</u> , Range <u>25 E</u> , Section <u>6</u>	; Township <u>N</u> , Range <u>E</u> ,	Section	
	Approximate Stationing or F	Roadposts:			
	Watershed: 13 - Upper Yello	owstone County:Yellows	tone		
	Evaluating Agency: RESPEC Purpose of Evaluation: Wetland potentially affe Mitigation wetlands; pro Mitigation wetlands; po Other	ected by MDT project e-construction st-construction	9. Assessment Area (/	(visually estimated) 4.7 (measured, e.g. GPS) AA) Size (acre): mining AA) 4.7 (measured)	
1(D. 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	50
	Depressional	Scrub-Shrub Wetland	Excavated	Seasonal / Intermittent	45
	Depressional	Aquatic Bed	Excavated	Seasonal / Intermittent	5

Comments: Created wetlands include both emergent, open water (aquatic bed) and developing scrub-shrub classes

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

12. GENERAL CONDITION OF AA

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

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

Comments (types of disturbance, intensity, season, etc.): The wetland mitigation site was constructed in 2012/2013 and included substantial excavation, modification/rehabilitation to existing wetlands, and revegetation. Based on review of previous data and reports, the preserved wetland areas at higher elevations appear to be losing hydrology with excavated wetland cells retaining hydrology but also drying out. Site was re-evaluated in 2018 specifically for preserved wetlands and for existing wetland areas outside of excavated cells.

- ii. Prominent noxious, aquatic nuisance, and other exotic vegetation species: Euphorbia esula, Cirsium arvense, Convolvusus arvensis.
- iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA consists of excavated depressional wetland cells within a historic gravel pit/wetland site. Wetland mitigation construction was completed in 2013 and 2019 is the seventh monitoring year for the expanded wetland site. Land use surrounding the AA includes commercial developments, agriculture (grazing), transportation (railroad and interstate), and a shooting range within the site.

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 p existence of additional	O (1)	Modified Rating
≥3 (or 2 if one is forested) classes	high	NA	NA	NA
2 (or 1 if forested) classes		NA	NA	NA
1 class, but not a monoculture		←NO	YES→	
1 class, monoculture (1 species comprises ≥90% of total cover)		NA	NA	NA

Comments: Palustrine emergent vegetation, aquatic bed and young palustrine scrub-shrub communities developing.

Wetland/Site #(s): Kindsfater - created wetland

14A. HABITAT FOR FEDERAL	LY LISTE	OR	PROP	OSED	THRE	EATEN	IED (OR EI	NDANG	ERED	PLA	NTS C	R AN	IMALS	3				
 i. AA is Documented (D) or Su Primary or critical habitat (list Secondary habitat (list species Incidental habitat (list species No usable habitat 	species)			S S	eck bo	ox base	ed on	defin	itions ir	i manu	ıal.								
ii. Rating: Based on the stronge															•	, .,			
	Doc/Prima	iry	Sus/P	rimary	Do	oc/Sec	onda	ary	Sus/Se	conda	iry	Doc/li	ncider	ntal	Sus/	Incide	ental	Non	е
Functional Point/Rating			-	·			-											0L	
Sources for documented use (14B. HABITAT FOR PLANTS O Do not include species list	OR ANIMA	LS R	ATED	,								-		-		tions/k	<u>nown</u>	<u>occurre</u>	ences
i. AA is Documented (D) or Su Primary or critical habitat (list Secondary habitat (list species Incidental habitat (list species No usable habitat	species)			S <u>Pla</u> S				defini	tions in	manua	al.								
ii. Rating: Based on the strong									<u> </u>										_
- U	Doc/Prima	ıry	Sus/P	rimary	Do	oc/Sec	onda	ary	Sus/Se	conda	ry	Doc/li	ncider	ntal	Sus/	Incide	ntal	None	
S1 Species Functional Point/Rating			-				-		-										
S2 and S3 Species Functional Point/Rating	.9H																		
Sources for documented use (ins spa	adefo	ot duri	ng the	2013	site ir	rvestig	ation;	none	
observed in 2014-2018. MDT ide	entified piai	ns sp	aderoc	<u>it again</u>	aurin	ig a 20	19 SII	te vis	<u>IT</u>										
14C. GENERAL WILDLIFE HAI	BITAT RA	TING																	
i. Evidence of Overall Wildlife	Use in the	AA:	Checl	k subst	antial	, mode	rate,	or lov	w based	l on su	pport	ting evi	idence						
□ Substantial: Based on any o □ observations of abundant □ abundant wildlife sign sucl □ presence of extremely limi □ interview with local biologi ☑ Moderate: Based on any of tl ☑ observations of scattered vice common occurrence of wil ☑ adequate adjacent upland	wildlife #s of has scat, to have scattered to have scatt	or hig racks t feato wledg g [che ups of	h spec , nest : ures no ge of th eck]. r indivi	structur ot availa ne AA duals o	res, ga able in	ame tra	ails, e urrou ew sp	etc. Inding	area	□ f □ li □ s □ i	ew or ttle to sparso ntervi	o no wi e adjac iew wit	Idlife o Idlife s ent up	bserva ign bland fo	ations ood s	during ources	g peak	cuse po	
☐ interview with local biologic			e of th	e AA															
ii. Wildlife Habitat Features: W	orking fror	n top	to bott	om, che	eck ap	ppropri	ate A	A att	ributes	in matr	ix to	arrive a	at ratir	ng. Str	uctur	al dive	rsity is	s from #	#13.
For class cover to be considered																n other	in ter	ms of th	heir
percent composition of the AA (s S/I = seasonal/intermittent; T/E =															nıaı;				
Structural Diversity (see #13)	tomporary	,, орги		High	_ ub		00 111		TOT TUTE			derate		o <u>j.</u>			L	_ow	
Class Cover Distribution (all vegetated classes)		ven			⊠ Un	even			□ E	ven			☐ Un	even				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	_	P/P	S/I	T/E	_
Water in ≥ 10% of AA	P/P 3/I	1/5	A	P/P	3/1	T/E	A	P/P	3/1	1/2	А	P/P	5/1	1/⊏	Α	P/P	3/1	T/E	Α
□ Low Disturbance at AA (see #12i)																			
					Н								1						
☐ High Disturbance at AA (see #12i)																			
, , ,																			
iii. Rating: Use the conclusions	s from i and	iii ab	ove an								oint a	and rat	ing.		_				
Evidence of Wildlife Use (i)	□ Ex	cepti	onal	W		Habit High	tat Fe	eatur	es Ratii Mo	ng (ii) oderate	<u>e</u> _		□ Lo	w					
☐ Substantial																			
						.7M													

Comments: Wildlife rating is expected to increase in subsequent monitoring years.

☐ Minimal

	Duration of Surface	☐ Permanent / Perennial	☐ Seasonal / Intermittent	☐ Temporary / Ephemeral	
i	Habitat Quality and Known	/ Suspected Fish Species in AA: Us	se matrix to select the functional point	and rating.	
	Type of Fishery: Col	d Water (CW)) Use the CW or WW guidelines in the	ne manual to complete the matrix.	
	Assess this function if the precluded by perched cul	AA is used by fish or the existing situation vert or other barrier].	ation is "correctable" such that the AA	could be used by fish [i.e., fish use is	
14	,	T ☑ NA (proceed to 14E) sh, fish use is not restorable due to ha en check the NA box and proceed to 14	•	n a management perspective [such as	fisl
			Wetland/Site #(s): Kindstater - cre	eated wetland	

Duration of Surface Water in AA	□Р	erman	ent / P	erenn	ial		□s	easoı	nal / Ir	ntermit	tent		□ т	empo	rary / I	Ephen	neral	
Aquatic Hiding / Resting / Escape Cover	Opti] mal	Adeq] uate	Po	or	Opti] mal	Ade	_ quate	Po	or	Opt	timal	Aded] uate	Po	oor
Thermal Cover: optimal / suboptimal	0	s	0	s	0	S	0	ø	0	S	0	S	0	S	0	S	0	S
FWP Tier I fish species																		
FWP Tier II or Native Game fish species																		
FWP Tier III or Introduced Game fish																		
FWP Non-Game Tier IV or No fish species																		

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

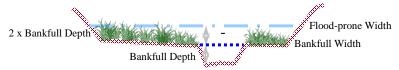
- ii. Modified Rating: NOTE: Modified score cannot exceed 1.0 or be less than 0.1.
- a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity, or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with 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? TYES, reduce score in i by 0.1 = __ or 🖾 N0
- b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area; specify in comments) for native fish or introduced game fish? \square YES, add to score in i or iia 0.1 = __ or \boxtimes N0
- iii. Final Score and Rating: Comments: No fish habitat within mitigation site; no perennial water
- 14E. FLOOD ATTENUATION NA (proceed to 14F)

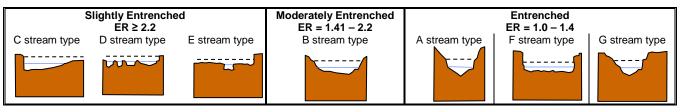
Applies only to wetlands that are subject to flooding via in-channel or overbank flow.

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.

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	☐ Slightly Entrenched			☐ Mod	lerately Enti	renched	☐ Entrenched			
(Rosgen 1994, 1996)	C, D, E stream types			Е	3 stream typ	е	A, F, G stream types			
Percent of Flooded Wetland Classified as										
Forested and/or Scrub/Shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	
AA contains no outlet or restricted outlet										
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: Flooding does not occur on the site as groundwater is the primary hyrdology sources; no flooding occurs from in channel or overbank flow.

Wetland/Site #(s): Kindsfater - created wetland

14F.	SHORT AND LONG TERM SUR	FACE WATER STORAGE	☐ NA (proceed to)	14G)	
	Applies to wetlands that flood or	pond from overbank or in-chani	nel 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

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									

follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see manual for further definitions of these terms].

Comments: Estimated that AA ponds greater than 5 out of 10 years with approximately 4.7 acres inundated to approximately 0.5 feet.

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

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

Sediment, Nutrient, and Toxicant Input Levels within AA	AA receive has potent nutrients, such that of substantial sedimental toxicants, present.	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 of functions are sedimentation or signs of eu	developmer ed to sedime A receives o to deliver hig compounds s substantially n, sources of	nt for "probal nt, nutrients, or surroundin gh levels of s such that other impaired. M nutrients or	ole or g land use ediments, er ajor	
% Cover of Wetland Vegetation in AA	⊠≥.	70%	□ <	70%	□≥7	70%	□ < 70 %		
Evidence of Flooding / Ponding in AA		☐ No	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No	
AA contains no or restricted outlet	1H								
AA contains unrestricted outlet									

Comments: <u>Isolated depressional wetland cells do not have outlets.</u> Percent cover of wetland vegetation increased to greater than 70%.

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

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

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

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

Comments: The AA does not occur on a stream bank or drainage. No wave action occurs in depression wetland areas when inundated.

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

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

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

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

Α		Vegeta	ted Co	mponent	: >5 ac	res	\boxtimes	Vegeta	ated Co	mponent	1-5 ac	res	☐ Vegetated Component <1 acre						
В	☐ High ☐ Moderate		☐ Low ☐ High		ligh	☐ Moderate		☐ Low		☐ High		☐ Mo	derate	☐ Low					
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
P/P																			
S/I								.5M											
T/E/A																			

			Wetland	/Site #(s)): <u>Kindsfater -</u>	created wetlar	<u>nd</u>				
14I. PRODUCTION EXPORT / FOOD CH	AIN SUF	PPORT (contin	nued)								
iii. Modified Rating: Note: Modified score	e cannot	exceed 1.0 o	r be less than	0.1.							
Vegetated Upland Buffer: Area with mowing or clearing (unless for weed co is there an average ≥ 50-foot wide veg	ontrol).	•			•		•	·			
iv. Final Score and Rating: .4M Comm	ents: A	djacent upland	d buffer with gr	eater tha	n 30% plant c	over.					
14J. GROUNDWATER DISCHARGE / RE Check the appropriate indicators in i	-										
i. Discharge Indicators The AA is a slope wetland. Springs or seeps are known of Vegetation growing during do Wetland occurs at the toe of a Seeps are present at the wetland AA permanently flooded durin Wetland contains an outlet, but Shallow water table and the semantic Cother:	rmant se a natural and edge g drough ut no inle	eason/drought. slope. e. nt periods. et.		⊠ 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	d ii above	e and the table	e below to sele	ct the fur	nctional point a	and rating.					
Criteria			Saturation at A ATER THAT I ⊠ S	S RECH			TER SY	STEM			
☐ Groundwater Discharge or Recha	rge		7M		<u></u>		☐ None				
☐ Insufficient Data/Information	90					I					
Comments: Vegetation observed to be gro	owing fol	lowing regiona	al drought con	ditions; g	ravel substrate	e in created de	epression	al wetland	<u>-1</u> 1		
areas.	-		-								
14K. UNIQUENESS											
i. Rating: Working from top to bottom, us					nt and rating. es not contair		16				
Replacement Potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland OR plant association listed as "S1" by the MTNHP						AA does not contain previously cited rare types OR associations AND structural diversity (#13) is low-moderate				
` '	□ Rare	□ Common	□ Abundant	□ Rare	□ Common	☐ Abundant	□ Rare		☐ Abundan		
Low Disturbance at AA (#12i)											
Moderate Disturbance at AA (#12i)								.3L			
☐ High Disturbance at AA (#12i)											
Comments: Wetlands are considered com	ımon, sit	<u>e has modera</u>	<u>te disturbance</u>	, and stru	uctural diversit	y is moderate.	<u>.</u>				

141	4L. RECREATION / EDUCATION POTENTIAL NA (proceed to Overall Summary and Rating page) Affords 'bonus' points if AA provides a recreational or educational opportunity.											
i. I	Is the AA a known or potential recreational or educational site? 🛛 YES, go to ii. 🔲 NO, check the NA box.											
ii.	Check categories that apply to the AA: ☐ Educational/Scientific Study ☐ Consumptive Recreational ☐ Non-consumptive recreational ☐ Other:											
iii.	Rating: Use the matrix below to select the functional point and rating.											

Known or Potential Recreational or Educational Area Potential Known Public ownership or public easement with general public access (no permission required) .2H Private ownership with general public access (no permission required) Private or public ownership without general public access, or requiring permission for public access

Comments: Access is permitted without permission with the exception of the police shooting range.

15. GENERAL SITE NOTES: Anticipate higher wildlife ratings in subsequent monitoring years. Wetland acreage remained the same from 2018 to 2019.

Wetland/Site #(s): Kindsfater - created wetland

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	4.23	*
C. General Wildlife Habitat	mod 0.70	1.00	3.29	*
D. General Fish Habitat	NA	NA	0	
E. Flood Attenuation	NA	NA	0	
F. Short and Long Term Surface Water Storage	mod 0.60	1.00	2.82	
G. Sediment / Nutrient / Toxicant Removal	high 1.00	1.00	4.70	*
H. Sediment / Shoreline Stabilization	NA	NA	0	
I. Production Export / Food Chain Support	mod 0.50	1.00	2.35	
J. Groundwater Discharge / Recharge	mod 0.70	1.00	3.29	*
K. Uniqueness	low 0.30	1.00	1.41	
L. Recreation / Education Potential (bonus point)	high 0.20		0.94	
Total Points	4.9	8		Functional Units
Percent of Possible	e Score 61% (round	to nearest whole	e number)	

Score of 1 functional point for L Score of 1 functional point for L	Flood Attenuation and answer to Question 14E.ii is "yes"; or
Score of 1 functional point for I Score of .9 or 1 functional poin Score of .9 or 1 functional poin	for both General Wildlife Habitat and General Fish/Aquatic Habitat; or Uniqueness; or
☐ Category III Wetland: (Criteria for	Categories I, II, or IV not satisfied)
Low" rating for Uniqueness; a	1 < 1 acre (do not include upland vegetated buffer); and
released of possible decire vise	70 (Todina to Hodrost Wildle II).
OVERALL ANALYSIS AREA (AA) RATING: Check the appropriate category based on the criteria outlined above.
□ I □ II ⊠ III	

MDT MONTANA WETLAND ASSESSMENT FORM (revised March 2008)

1.	. Project Name: Kindsfater 2.	MDT Project #: STPX-0056(5	56) 3. Control #: 5034		
3.	Evaluation Date: <u>7/22/2019</u>	4. Evaluator(s): C. Hoschoue	er, T. Traxler, C. Seibert 5. We	etland/Site #(s): Kindsfater - p	reservation wetland
6.	. Wetland Location(s): Towns	ship <u>2 S</u> , Range <u>25 E</u> , Section <u>6</u>	S; Township <u>N</u> , Range <u>E</u>	Section	
	Approximate Stationing or I	Roadposts:			
	Watershed: 13 - Upper Yello	owstone County:Yellows	tone		
7.	Evaluating Agency: RESPE Purpose of Evaluation: ☐ Wetland potentially affe ☐ Mitigation wetlands; po ☐ Other	ected by MDT project e-construction	9. Assessment Area (: (visually estimated) 28.7 (measured, e.g. GPS) AA) Size (acre): (visual rmining AA)	
1	0. 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
	Slope	Emergent Wetland	Partly Drained	Seasonal / Intermittent	80
	Slope	Scrub-Shrub Wetland	Partly Drained	Seasonal / Intermittent	20
					1

Comments: Preservation wetlands are primarily emergent with some scrub-shrub included.

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

12. GENERAL CONDITION OF AA

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

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

Comments (types of disturbance, intensity, season, etc.): The wetland mitigation site was constructed in 2012 and 2013 which consisted of substantial excavation, modification/rehabilitation of existing wetlands, and revegetation. Existing wetlands (pre-construction) were preserved and rehabilitated. Preserved wetland areas at higher elevations appear to be losing hydrology and transitioning into upland communities with some excavated wetland cells retaining hydrology.

- ii. Prominent noxious, aquatic nuisance, and other exotic vegetation species: <u>Euphorbia esula, Cirsium arvense, Convolvulus arvensis and Cynoglossum officinale.</u>
- iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA consists of pre-existing slope/depressional wetland areas located within a historic gravel pit/wetland site. Wetland mitigation constructed was completed in early spring 2013 and 2019 is the seventh monitoring year for the expanded wetland site. Land use surrounding the AA includes commercial developments, agriculture (grazing), transportation (railroad and interstate), and a shooting range within the site.
- 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	mod	NA	NA	NA	
1 class, but not a monoculture		←NO	YES→		
1 class, monoculture (1 species comprises ≥90% of total cover)		NA	NA	NA	

Comments: Emergent wetland community is dominant with areas of scrub-shrub wetland.

Wetland/Site #(s): Kindsfater - preservation wetland

14A. HABITAT FOR FEDERAL	LY LIS	STED	OR P	ROP	OSED	THRE	ATEN	ED C	R EN	NDANG	ERED	PLA	NTS C	R AN	IMALS	3				
i. AA is Documented (D) or Su Primary or critical habitat (list Secondary habitat (list specie Incidental habitat (list species No usable habitat	species)	es)	to co		S S S	ck bo — —	x base	d on	defin	itions ir	manu	al.								
ii. Rating: Based on the stronge	est hab	oitat ch	osen	in 14	A(i) ab	ove, s	select t	he co	orresp	onding	function	onal p	oint a	nd rati	ng.					
Highest Habitat Level	Doc/P	rimary	y S	Sus/P	rimary	Do	c/Sec	onda	ry S	Sus/Se	conda	ry	Doc/li	ncider	ntal	Sus/	Incide	ntal	Non	е
Functional Point/Rating	-				-							i							0L	
Sources for documented use	(e.g. ob	oserva	tions	reco	rds): U	SFWS	S list fo	r spe	cies i	n Yello	wstone	Cou	nty							_
14B. HABITAT FOR PLANTS (Do not include species lis				TED S	S1, S2,	OR S	83 BY	THE	MON	TANA	IUTAN	RALI	HERIT	AGE I	PROG	RAM				
i. AA is Documented (D) or Su Primary or critical habitat (list Secondary habitat (list species Incidental habitat (list species No usable habitat	species)	es) `			S <u>Pla</u> S S					tions in	manua	al.								
ii. Rating: Based on the strong				າ in 1∠	IA(i) at	ove,	select	the c	orres	ponding	j functi	onal	point a	nd rat	ing.					_
- U	Doc/P	rimary	y S	Sus/P	rimary	Do	c/Sec	onda	ry S	Sus/Se	conda	ry	Doc/lı	ncider	ntal	Sus/l	Incide	ntal	None	
S1 Species Functional Point/Rating	-				-					-										
S2 and S3 Species Functional Point/Rating	.9	9H			. -					-										
Sources for documented use	(e.g. ob	oserva	tions	reco	rds): O	bserv	ed app	roxin	nately	40 pla	ins spa	adefo	ot duri	ng the	2013	site ir	nvestig	ation;	none	_
observed in subsequent site visi					′ –						•									
14C. GENERAL WILDLIFE HA	BITAT	RATI	NG																	
i. Evidence of Overall Wildlife	Use ir	n the A	AA : (Check	substa	antial,	mode	rate,	or lov	v based	on su	pport	ing evi	dence).					
☐ Substantial: Based on any of abundant ☐ abundant wildlife sign suc ☐ presence of extremely lim ☐ interview with local biolog	wildlife th as so niting ha	e #s or cat, tra abitat f	high cks, eatu	speci nest s es no	tructur t availa	es, ga	àme tra	ails, e	itc.	d)	_	ew or ttle to parse	no wil no wi adjac	Idlife o Idlife s ent up	bserva sign bland fo	ations ood s	ources	g peak	k]. use p	
 Moderate: Based on any of t □ observations of scattered □ common occurrence of wi □ adequate adjacent upland □ interview with local biolog 	wildlife Idlife si I food s	group ign suc source	os or ch as s	individ scat,	tracks,							perio	ds							
ii. Wildlife Habitat Features: V	Vorkino	r from	top to	botto	m. che	eck ar	opropri	ate A	A attr	ibutes	n matr	ix to a	arrive a	at ratin	na. Str	uctur	al dive	rsity is	s from a	#13.
For class cover to be considered																				
percent composition of the AA (s																nial;				
S/I = seasonal/intermittent; T/E =	= temp	orary/e	epher	neral;	and A	= abs	sent [s	ee ma	anual	for furt	her de	initio	ns of tl	nese te	erms].					
Structural Diversity (see #13)				□н	ligh						\geq	Mo	derate						.ow	
Class Cover Distribution (all vegetated classes)		☐ Ev	en] 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	F/F	3/1	1/⊏	A	F/F	3/1	1/⊏	A	F/F	3/1	1/⊏	A	F/F	3/1	1/⊏	A	F/F	3/1	1/6	A
☐ Low Disturbance at AA (see #12i)																				
														М						
☐ High Disturbance at AA (see #12i)																				
(/										1										
iii. Rating: Use the conclusion:	s from	i and i	i abo	ve and								oint a	and rat	ing.		_				
Evidence of Wildlife Use (i)	Г	Exc	eptio	nal	W		Habit	at Fe	ature	es Ratii	ng (ii) oderate	9		□Lo	w					
☐ Substantial																1				
⊠ Moderate					-				-		5M									

Minimal --- --- --- --- --- --- --- Comments: Expect wildlife use/rating to increase for subsequent monitoring years as vegetation becomes more established and weed control efforts are implemented.

	Wetland/Site #(s): Kindsfater - preservation wetland 14D. GENERAL FISH HABITAT NA (proceed to 14E)																			
140	 GENERAL FISH HABITA' If the AA is not used by fis entrapped in a canal], the 	sh, fish	use is	not re	storab	le due	to ha		onstra	aints, c	or is not	t desire	ed fron	n a ma	anager	nent p	erspec	tive [s	uch as	fish
	Assess this function if the precluded by perched culv			•		existin	g situa	ation is	corr "corr	ectab	e" sucl	n that t	he AA	coulc	l be us	ed by f	ish [i.e	e., fish	use is	
	Type of Fishery: Cole	d Wate	r (CW) 🗆 \	Warm	Water	(WW) Use	the C	CW or	WW gu	uideline	es in tl	ne mai	nual to	comple	ete the	matrix	ζ.	
	labitat Quality and Known	Susp	ected	Fish S	pecie	s in A	A: Us	se mat	rix to	select	the fur	nctiona	l point	and r	ating.					ī
	Duration of Surface Water in AA Permanent / Perennial Seasonal / Intermittent Temporary / Ephemeral																			
Aquatic Hiding / Resting /								Poor												
	Thermal Cover: optimal	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																			
П	FWP Tier III or Introduced Game fish																			
	FWP Non-Game Tier IV or No fish species																			
Sou	rces used for identifying f	ish sp	p. pot	entially	y foun	d in A	A:			•										1
ii. I	Modified Rating: NOTE: Mo	odified	score	cannot	excee	ed 1.0	or be	less th	an 0.	1.										
МD	s fish use of the AA significar EQ list of waterbodies in nee port, or do aquatic nuisance	d of TI	MDL d	évelopi	ment v	vith lis	ted "P	robabl	e Imp	aired	Uses" i	includir	ng col	d or w	arm wa	ater fis	hery o	r aqua	tic life	
	Does the AA contain a docurrive fish or introduced game fi											tuary p	ool, u	pwelli	ng are	a; spec	cify in o	comm	ents) fo	or
iii.	Final Score and Rating: _	Comm	ents:	No fish	n habit	at with	in mit	igation	site;	no pe	rennial	water								
14E	E. FLOOD ATTENUATION Applies only to wetlands to If wetlands in AA are not f	hat are	subje	NA (pro ct to flo in-char	oding	via in	-chanı	nel or o	overba eck th	ank flo ne NA	w. box an	d proc	eed to	14F.						
	renchment Ratio (ER) Estir od-prone width = estimated h																		of the s	stream.
floo	/ d prone width / bankfull width	= _ n = ent	renchr	ment ra	tio		2 x I	Bankful	l Dept	th	Bar	nkfull D	epth			(husy)	Flo Bankfi	1	one Wid	lth

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

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

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

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA? ☐ YES ☒ NO Comments: Wetlands are not subject to flooding via in-channel or overbank flow as there are no waterways on site.

Wetland/Site #(s): Kindsfater - preservation wetland

14F.	SHORT AND LONG TERM SURFACE WATER STORAGE	☐ NA (proceed to)	14G)
	Applies to wetlands that flood or pond from overbank or in-chan	nel flow, precipitation	upland surface flow, or groundwater flow.

If no wetlands in the AA are subject to flooding or ponding, then check the NA box and proceed to 14G.

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

Estimated Maximum Acre Feet of Water Contained in Wetlands within the AA that are Subject to Periodic Flooding or Ponding		>5 acre fe	eet	□ 1.1	to 5 ac	re feet	☐ ≤1 acre foot			
Duration of Surface Water at Wetlands within the AA	□ P/P	⊠ S/I	□ T/E	□ P/P	□ S/I	□ T/E	□ P/P	□ S/I	□ T/E	
Wetlands in AA flood or pond ≥ 5 out of 10 years		.9H								
Wetlands in AA flood or pond < 5 out of 10 years										

Comments: Estimated that AA ponds greater than 5 out of 10 years with approixmately 25 acres inundated to approximately 0.5 feet.

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

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

Sediment, Nutrient, and Toxicant Input Levels within AA	AA receive has potent nutrients, such that a substantia sedimenta toxicants, present.	tial to deliv or compou other funct Illy impaire tion, sourc	er sedime inds at lev ions are n d. Minor es of nutr	nts, els ot ients or	Waterbody is need of TMDI causes" relat toxicants or A has potential nutrients, or c functions are sedimentation or signs of eu	developmer ed to sedime AA receives of to deliver hig compounds s substantially n, sources of	nt for "probak nt, nutrients, or surroundin gh levels of so such that other or impaired. M nutrients or	ole or g land use ediments, er ajor
% Cover of Wetland Vegetation in AA	⊠≥.	70%	□ <	70%	□ ≥ 70 %		□ < 70%	
Evidence of Flooding / Ponding in AA	⊠ Yes	☐ No	☐ Yes	□No	☐ Yes	☐ No	☐ Yes	☐ No
AA contains no or restricted outlet								
AA contains unrestricted outlet	.9H							

Comments: Unrestricted drainage from the bench down to meadow below.

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

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

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

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

Comments: Wetlands do not occur along stream bank, open water not likely subject to wave action.

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	\boxtimes M	
☐ E/H			
■ M			
L			
⊠ NA		M	

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

Α	⊠ '	Vegeta	ted Co	mponent	: >5 ac	res	☐ Vegetated Component 1-5 acres						☐ Vegetated Component <1 acre					
В	_	ligh	⊠ M	oderate		Low	_ 	ligh		derate		Low	_ 	ligh	☐ Mo	derate		.ow
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P																		
S/I			.7M															
T/E/A																		

			VVCliand	μ Oile π (3)	. Miliusialei -	preservation v	velianu		
14I. PRODUCTION EXPORT / FOOD CH	AIN SU	PPORT (contin	nued)						
iii. Modified Rating: Note: Modified score	e canno	t exceed 1.0 or	r be less than	0.1.					
Vegetated Upland Buffer: Area with mowing or clearing (unless for weed or Is there an average ≥ 50-foot wide veg	ontrol).						•	·	
iv. Final Score and Rating: $\underline{.8H}$ Comm	<u>ents: S</u>	urface outlet d	raining wetland	ds down-	slope to mead	dow below site	_		
14J. GROUNDWATER DISCHARGE / RE Check the appropriate indicators in i									
i. Discharge Indicators ☐ The AA is a slope wetland. ☐ Springs or seeps are known or observed. ☐ Vegetation growing during dormant season/drought. ☐ Wetland occurs at the toe of a natural slope. ☐ Seeps are present at the wetland edge. ☐ AA permanently flooded during drought periods. ☐ Wetland contains an outlet, but no inlet. ☐ Shallow water table and the site is saturated to the surface. ☐ Other:									
iii. Rating: Use the information from i and	ii abov	e and the table	e below to sele	ct the fur	nctional point a	and rating.			_
						GROUNDWAT			
Criteria		<i>WITH W</i> □ P/P	<u>'ATER THAT I</u> ⊠ S		<u>ARGING THE</u> □ T	GROUNDWA	TER SYS		
☐ Groundwater Discharge or Recha	rge		7M		<u></u>	<u> </u>		iie	
☐ Insufficient Data/Information	9-								
Comments: Saturation observed in portion	ns of AA	during dry sea	ason/drought o	onditions	<u>.</u>				•
14K. UNIQUENESS									
i. Rating: Working from top to bottom, us	e the ma	atrix below to s	select the funct	tional poi	nt and rating.				
i. Rating: Working from top to bottom, us Replacement Potential	AA cor spring foreste	ntains fen, bo ps or mature (; ed wetland OF iation listed as	g, warm >80 yr-old) ⋜ plant	AA doe cited ra diversi contair	nt and rating. es not contain are types ANI ty (#13) is hig ns plant asso as "S2" by the	D structural gh OR ciation	previou associa	es not contain usly cited ran ations AND s ty (#13) is lov	e types OR tructural
	AA cor spring foreste associ the MT	ntains fen, bo ps or mature (; ed wetland OF iation listed as	g, warm >80 yr-old) R plant s "S1" by	AA doe cited ra diversi contair listed a	es not contain are types ANI ty (#13) is hig ns plant asso as "S2" by the	D structural gh OR ciation	previou associa diversi	usly cited rare ations AND s	e types OR tructural v-moderate
Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i)	AA cor spring foreste associ the MT	ntains fen, bo js or mature (x ed wetland OF iation listed as FNHP	g, warm >80 yr-old) R plant s "S1" by	AA doe cited ra diversi contair listed a	es not contain are types ANI ty (#13) is hig ns plant asso as "S2" by the	D structural gh OR ciation e MTNHP Abundant	previou associa diversi	usly cited ran ations AND s ty (#13) is lov Common	e types OR tructural v-moderate
Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i)	AA cor spring foreste associ the MT	ntains fen, bo gs or mature (; ed wetland OF iation listed as FNHP	g, warm -80 yr-old) R plant s "S1" by Abundant	AA doe cited ra diversi contair listed a	es not contain are types ANI ty (#13) is high as plant asso as "S2" by the Common	D structural gh OR ciation e MTNHP	previou associa diversi	usly cited ranations AND sty (#13) is low Common 3L	e types OR tructural v-moderate Abundant
Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i) High Disturbance at AA (#12i)	AA col spring foreste associ the MT	ntains fen, bo js or mature (; ed wetland OF iation listed as FNHP Common	g, warm >80 yr-old) R plant s "S1" by	AA doe cited ra diversi contair listed a	es not contain are types ANI ty (#13) is hig as plant asso as "S2" by the Common	D structural gh OR ciation e MTNHP Abundant	previou associa diversi	usly cited ran ations AND s ty (#13) is lov Common	e types OR tructural v-moderate
Replacement Potential Estimated Relative Abundance (#11) Low Disturbance at AA (#12i) Moderate Disturbance at AA (#12i)	AA col spring foreste associ the MT Rare 1.	ntains fen, bo ps or mature (); ed wetland OF iation listed as TNHP Common ational or educa or educational	g, warm >80 yr-old) R plant s "S1" by Abundant NA (proceed to ational opportu- site? X YES	AA doe cited ra diversi contain listed a Rare	es not containare types ANI ty (#13) is higher assonated as "S2" by the Common Summary and NO, che	D structural gh OR ciation e MTNHP Abundant B Rating page)	previou associa diversi	usly cited ranations AND sty (#13) is low	e types OR tructural v-moderate Abundant

Traing.		
Known or Potential Recreational or Educational Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	
Private ownership with general public access (no permission required)		
Private or public ownership without general public access, or requiring permission for public access		

Comments: Access is permitted without permission with the exception of the police shooting range.

15. GENERAL SITE NOTES: Constructed wetland areas were wetter in 2019 compared to 2018 but some areas appear to be losing hydrology and the vegetation communities are transitioning into upland.

Wetland/Site #(s): Kindsfater - preservation wetland

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	25.83	*						
C. General Wildlife Habitat	mod 0.50	1.00	14.35							
D. General Fish Habitat	NA	NA	0							
E. Flood Attenuation	NA	NA	0							
F. Short and Long Term Surface Water Storage	high 0.90	1.00	25.83	*						
G. Sediment / Nutrient / Toxicant Removal	high 0.90	1.00	25.83	*						
H. Sediment / Shoreline Stabilization	NA	NA	0							
I. Production Export / Food Chain Support	mod 0.80	1.00	22.97							
J. Groundwater Discharge / Recharge	mod 0.70	1.00	20.09	*						
K. Uniqueness	low 0.30	1.00	8.61							
L. Recreation / Education Potential (bonus point)	high 0.20		5.74							
Total Points	5.2	8	149.24 Total	Functional Units						
Percent of Possible Score 65% (round to nearest whole number)										

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

APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Kindsfater Yellowstone County, Montana

C-1 RSI-2979



Photo Point: 1. View of eastern edge of Cell 14 looking W Bearing: 280 degrees Year: 2013



Photo Point: 1. View of eastern edge of Cell 14 looking W Bearing: 280 degrees Year: 2019



Photo Point: 2. View of western side of Cell 13 looking SW Bearing: 280 degrees Year: 2013



Photo Point: 2. View of western side of Cell 13 looking SW Bearing: 280 degrees Year: 2019



Photo Point: 3. View of southern edge of Cell 9 looking NE Bearing: 0 degrees Year: 2013



Photo Point: 3. View of southern edge of Cell 9 looking NE Bearing: 0 degrees Year: 2019



Photo Point: 4. View of Cell 12 looking S Bearing: 200 degrees Year: 2013



Photo Point: 4. View of Cell 12 looking S Bearing: 200 degrees Year: 2019



Photo Point: 5. View of Cell 11 looking SW Bearing: 10 degrees Year: 2013



Photo Point: 5. View of Cell 11 looking SW Bearing: 10 degrees Year: 2019



Photo Point: 6. View of western side of Cell 10 looking SW Bearing: 150 degrees Year: 2013



Photo Point: 6. View of western side of Cell 10 looking SW Bearing: 150 degrees Year: 2019



Photo Point: 7. View of western side of Cell 5 looking east Bearing: 90 degrees Year: 2013



Photo Point: 7. View of western side of Cell 5 looking east Bearing: 90 degrees Year: 2019



Photo Point: 8. View of western edge of Cell 2 looking NW Bearing: 315 degrees Year: 2013



Photo Point: 8. View of western edge of Cell 2 looking NW Bearing: 315 degrees Year: 2019



Photo Point: 9. View of Cell 1 looking N Bearing: 90 degrees Year: 2013



Photo Point: 9. View of Cell 1 looking N Bearing: 90 degrees Year: 2019



Photo Point: 10. View of northern portion of Cell 3 looking SE Bearing: 140 degrees Year: 2013



Photo Point: 10. View of northern portion of Cell 3 looking SE Bearing: 140 degrees Year: 2019



Photo Point: 11. View of Cell 7 looking SE Bearing: 150 degrees Year: 2013



Photo Point: 11. View of Cell 7 looking SE Bearing: 150 degrees Year: 2019

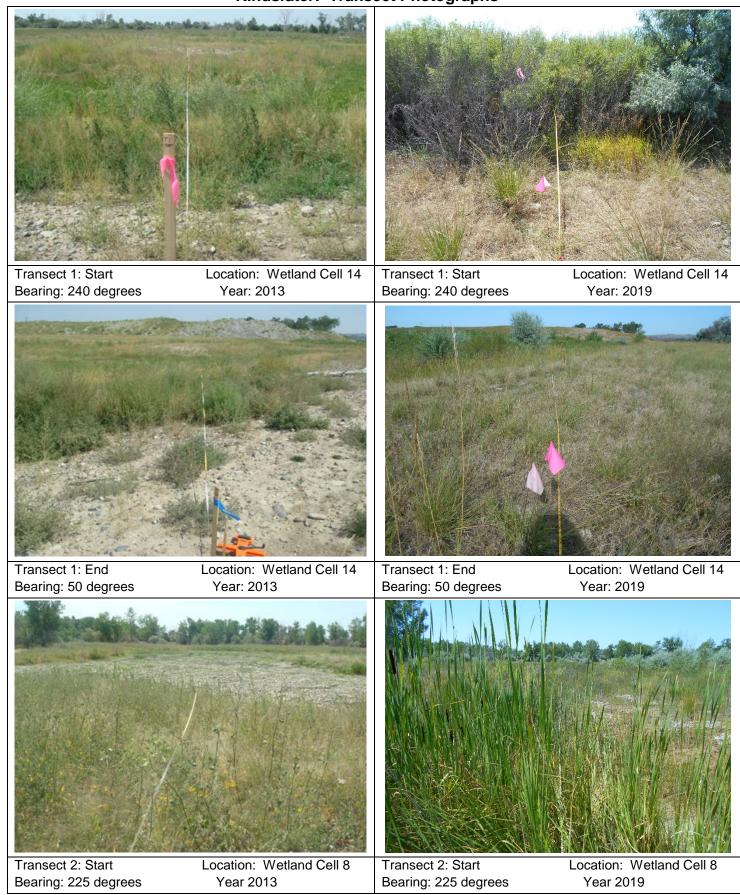


Photo Point: 12. View of Cell 6 looking W Bearing: 230 degrees Year: 2013



Photo Point: 12. View of Cell 6 looking W Bearing: 230 degrees Year: 2019

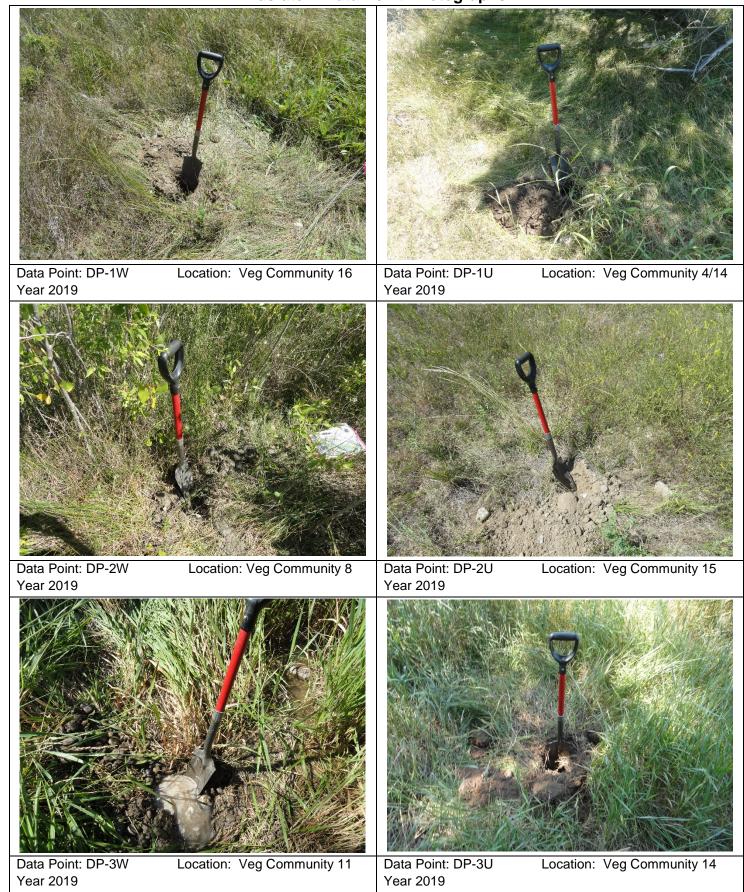
Kindsfater: Transect Photographs



Kindsfater: Transect Photographs



Kindsfater: Data Point Photographs



Kindsfater: Data Point Photographs



Data Point: DP-4W Year 2019

Location: Veg Community 10



Data Point: DP-4U Year 2019