MONTANA DEPARTMENT OF TRANSPORTATION
WETLAND MITIGATION MONITORING REPORT: YEAR 2011

McGinnis Meadows
Lincoln County, Montana



Prepared for:

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December 2011

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December 2011

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1. INTRODUCTION

The McGinnis Meadows 2011 Wetland Mitigation Monitoring Report presents the results of the second year of post-construction monitoring at the McGinnis Meadows mitigation area. The Montana Department of Transportation (MDT) wetland mitigation project is located in Section 33, Township 26 North, Range 28 West, Lincoln County, Montana (Figure 1). McGinnis Meadows is located approximately seven miles south of the US Highway 2 corridor on two parcels encompassing 33 acres of an historic hay field and pasture (Figure 2, Appendix A). McGinnis Creek, a tributary to the Fisher River, bisects the parcels. Figures 2 and 3 (Appendix A) show the site Monitoring Activity Locations and Mapped Site Features, respectively. Figure 4 delineates the 2011 Wetland Credit Areas. The MDT Mitigation Site Monitoring Form, US Army Corps of Engineers (USACE) Wetland Determination Data Forms (USACE 2010), and the 2008 MDT Montana Wetland Assessment Forms (Berglund and McEldowney 2008) are included in Appendix B. Representative photographs are included in Appendix C and the Project Plan Sheet is included in Appendix D.

The wetland restoration project lies within the boundaries of Watershed 1 - Kootenai River Basin. Wetlands developed at this location provide compensatory mitigation for wetland impacts associated with transportation projects in the Missoula District. The McGinnis Meadows site was selected after an extensive search of potential wetland and stream restoration sites by MDT within the Kootenai River Watershed in cooperation with a consortium of Conservation Districts known as the Montana Watersheds Incorporated (MWI). The consortium consisted of the Lincoln, Sanders, and Flathead County Conservation Districts with technical assistance from the USDA Natural Resource Conservation Service Centers (NRCS) in Bozeman, Kalispell, Libby, and Eureka. The wetland and stream restoration project will ultimately aid in improving the flood storage, stream length, and fisheries habitat of McGinnis Creek, and improve the overall wildlife, riparian, and wetland habitats impacted by past agricultural practices within the McGinnis Creek watershed.

Project goals are the restoration/re-establishment of approximately 0.8 acres of riparian habitat and 17.3 acres of degraded wetlands, creation of 2.9 acres of new emergent wetlands, enhancement of 1.74 acres of emergent wetlands and intermittent drainage, preservation of 0.3 acres of existing riparian communities within McGinnis Creek, and protection of 2.2 acres of upland buffer. The project credit ratios approved by the USACE (Corps File Number NWO-2008-03130-MTH) are presented in Section 3.9. The MDT is also looking to obtain approximately 8,835 stream credits for the restoration of 2,850 linear feet of McGinnis Creek. The approved performance standards (MDT 2009) are listed below.

1. **Wetland Characteristics**: All restored, created, enhanced, and preserved wetlands within the project limits will meet the three parameter criteria for hydrology, vegetation, and soils established for determining wetland areas as

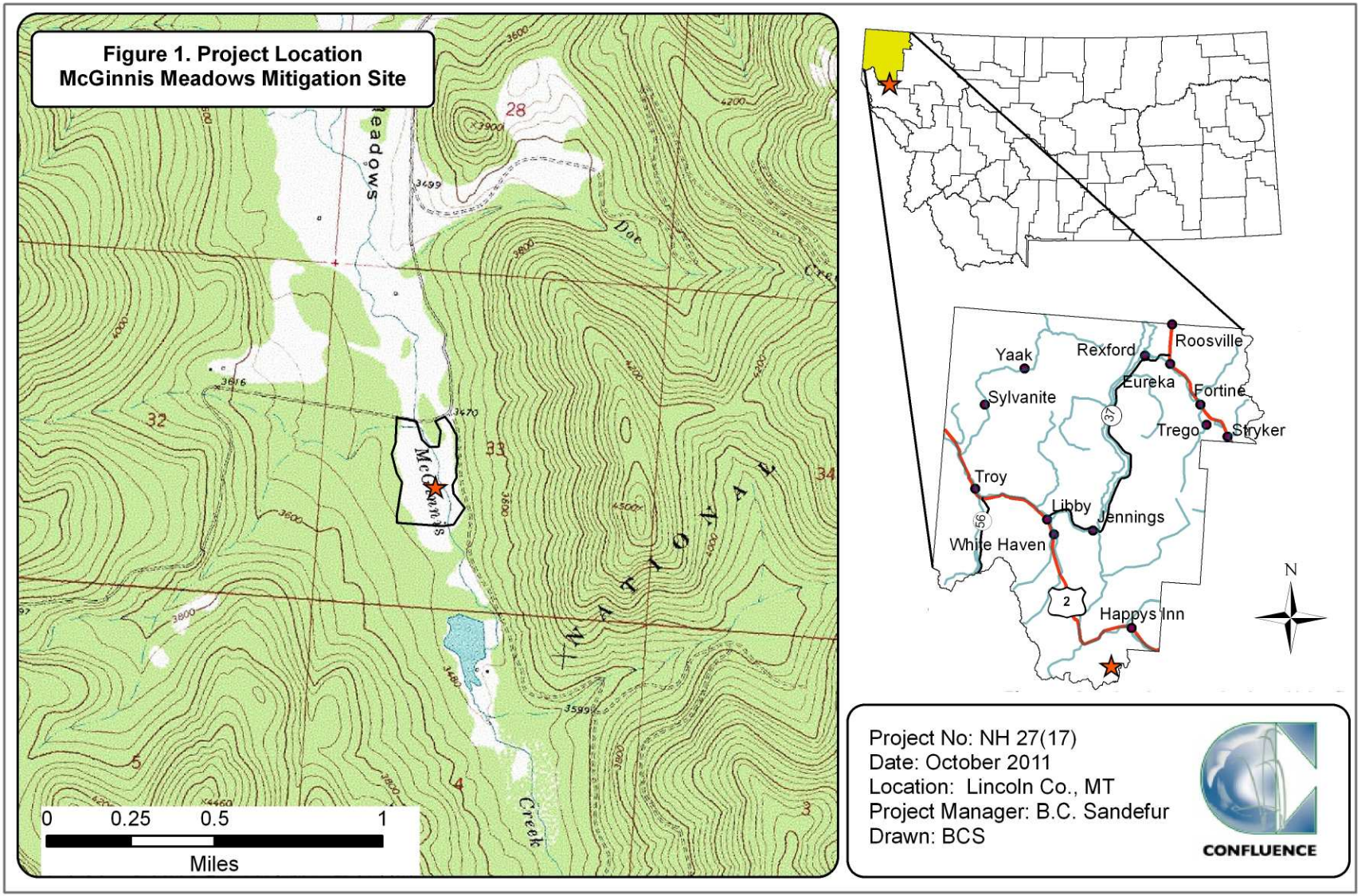


Figure 1. Project location of McGinnis Meadows Mitigation Site.

outlined in the *1987 Corps of Engineers Wetlands Delineation Manual for the Determination of Wetlands* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0*)* (USACE 2010).

a) **Wetland Hydrology Success** will be achieved where wetland hydrology is present as per the technical guidelines in the 1987 wetland manual and 2010 regional supplement. Soil saturation will be present for at least 12.5 percent of the growing season.

b) **Hydric Soil Success** will be achieved where hydric soil conditions are present (per the most recent Natural Resource Conservation Service definitions for hydric soil) or appear to be forming, the soil is sufficiently stable to prevent erosion, and the soil is able to support plant cover. Soil profile development will be documented during the course of the monitoring period to determine if wetland areas are exhibiting characteristics of hydric soils per current guidance. Since typical hydric soil indicators may require long periods to form, a lack of distinctive hydric soil features will not be considered a failure if hydrologic and vegetation success are achieved.

c) **Hydrophytic Vegetation Success** will be achieved where aerial cover of facultative or wetter species is greater than or equal to 70 percent and Montana State-listed noxious weeds do not exceed 5 percent cover.

The following concept of "dominance", as defined in the 1987 USACE manual, will be applied during future routine wetland determinations in created/restored wetlands: "*Subjectively determine the dominant species by estimating those having the largest relative basal area (woody overstory), greatest height (woody understory), greatest percentage of aerial cover (herbaceous understory), and/or greatest number of stems (woody vines).*"

i. Woody Plants – Plantings will be considered successful where they exceed 50 percent survival after five years. We anticipate natural colonization of woody plant species from nearby sources once the grazing, haying, and construction activities are removed from the site. The rate and extent of natural woody plant colonization will be dependent on factors such as habitat availability, beaver activity, seed sources, and other natural selection factors.

2. **Open Water:** It is the intent of the project to provide open water during the spring and early summer within excavated depressions. Open water will be considered successful and creditable.

3. **McGinnis Creek Channel Restoration Success** will be evaluated in terms of revegetation success.
    a) Revegetation along the new McGinnis Creek channel corridor will be considered successful when banks are vegetated with a majority of deep-rooting riparian and wetland plant species.
    b) The intent of the stream restoration is to allow the stream to migrate naturally within the floodplain and to give it enough room to move and stabilize itself within the site.

4. **Upland Buffer Success** will be achieved when the noxious weeds do not exceed 5 percent of cover within the buffer areas on site. Any area within the creditable buffer zone disturbed by project construction must have at least 50 percent aerial cover of non-weed species by the end of the monitoring period.

5. **Weed Control** will be based upon annual monitoring of the site to determine weed species and degree of infestation within the site, and control measures based upon the monitoring results will be implemented by MDT to minimize and/or eliminate the intrusion of State Listed Noxious weed species within the site. The MDT is currently managing the property to control relic weed problems prior to the initiation of wetland construction activities within the site.

6. **Fencing** of the proposed mitigation site has been installed around the perimeter of the site to protect the integrity of the wetland from disturbance. Fencing installed along the perimeter of the site was designed to be “wildlife friendly to allow for wildlife movement into and out of the wetland complex.

2. METHODS

The second year of monitoring was completed on August 7, 2011. Information collected during the field investigation has been documented on the Mitigation Monitoring Form and Wetland Data Form (Appendix B). Monitoring activity locations were located with a global positioning system (GPS) (Figure 2, Appendix A). Information collected during this site visit included a wetland delineation, vegetation community mapping, vegetation transect monitoring, soil and hydrology data collection, stream channel cross-sectional surveys, bird and wildlife use documentation, photographs, and a non-engineering examination of the infrastructure established within the mitigation project area.

2.1. Hydrology

Technical criteria for wetland hydrology guidelines have been established as “permanent or periodic inundation, or soil saturation within 12 inches of the ground surface for a significant period (usually 14 days or more or 12.5 percent) during the growing season (Environmental Laboratory 1987).” Systems with continuous inundation or saturation for greater than 12.5 percent of the growth

period are considered wetlands. The growth period is defined for purposes of this report as the number of days where there is a 50 percent probability that the minimum daily temperature is greater than or equal to 28 degrees Fahrenheit (Environmental Laboratory 1987). The growth period recorded for the meteorological station at Libby 32 SSE, Montana (245020), located approximately 20 miles northwest of the project site, extends from June 13 to September 1 for a total of 81 days (NRCS 2010). Areas defined as wetlands would require 10 days of inundation or saturation within 12 inches of the ground surface to meet the hydrology criteria and performance standards.

Hydrological indicators as outlined on the wetland data form were documented at eight data points established within the project area. The hydrologic indicators were evaluated according to features observed during the site visit. The data were recorded on electronic wetland data forms (Appendix B). Hydrologic assessments allow evaluation of mitigation goals addressing inundation/saturation requirements. Groundwater levels were measured in three monitoring wells with a Solinst Water Level Meter. The well locations are shown on Figure 2 (Appendix A).

2.2. Vegetation

The boundaries of general dominant species-based vegetation communities were determined in the field during the active growing season and subsequently delineated on the 2011 aerial photograph. The percent cover of dominant species within a community type was estimated and recorded on the monitoring form using the following ranges: 0 (<1 percent), 1 (1-5 percent), 2 (6-10 percent), 3 (11-20 percent), 4 (21-50 percent), and 5 (>50 percent) (Appendix B).

Temporal changes in vegetation will be evaluated through annual assessments of static belt transects established in summer 2010 (Figure 2, Appendix A). Vegetation composition was assessed and recorded along two vegetation belt transects approximately 10 feet wide and 504 feet (T-1) and 1000 feet long (T-2) (Figure 2, Appendix A). The transect locations were recorded with a GPS unit. Spatial changes in the dominant vegetation communities based on percent cover were recorded along the stationed transect. The percent aerial cover of each vegetation species within the belt transect was estimated using the same cover ranges listed for the polygon data (Appendix B). Photographs were taken at the endpoints of each transect during the monitoring event (Appendix C).

The location of noxious weeds was noted in the field and mapped on the 2011 aerial photograph (Figure 3, Appendix B). The noxious weed species identified are color-coded. The locations are denoted with the symbol "**x**", "▲", or "■" representing 0 to 0.1 acre, 0.1 to 1.0 acre, or greater than 1.0 acre in extent, respectively. Cover classes are represented by T, L, M, or H, for less than 1 percent, 1 to 5 percent, 2 to 25 percent, and 25 to 100 percent, respectively, as listed on Figure 3 (Appendix A).

The condition of the woody species installed onsite was evaluated during monitoring. Survival will be assessed annually.

2.3. Soil

Soil information was obtained from the *Soil Survey for Lincoln County Area* (USDA 2010) and *in situ* soil descriptions. Soil cores were excavated using a shovel and evaluated according to procedures outlined in the USACE 1987 manual and 2010 Regional Supplement. A description of the soil profile, including hydric indicators when present, was recorded on the wetland data form for each profile (Appendix B).

2.4. Wetland Delineation

Waters of the US including jurisdictional wetlands and special aquatic sites were delineated throughout the project area in accordance with criteria established in the 1987 USACE wetland manual and the 2010 Regional Supplement. In order to delineate a representative area as wetland, the technical criteria for hydrophytic vegetation, hydric soil, and wetland hydrology, as described in the 1987 Manual, must be satisfied. The indicator status of vegetation was derived from the National List of Plant Species that Occur in Wetlands: Northwest Region 9 (Reed 1988). A Routine Level-2 On-site Determination Method (Environmental Laboratory 1987) was used to delineate jurisdictional areas within the project boundaries. Eight wetland data points (Figure 2 in Appendix A) were evaluated in 2011 to help delineate the wetland/upland boundary. The information was recorded electronically on the wetland data form (Appendix B).

The wetland boundary was determined in the field based on changes in plant communities and/or hydrology, and changes in soil characteristics. Topographic relief boundaries within the project area were also examined and cross-referenced with soil and vegetation communities as supportive information for this delineation. Vegetation composition, soil characteristics, and hydrology were assessed at likely wetland and adjacent upland locations. If all three parameters met the criteria, the area was designated as wetland and mapped by vegetation community type. When any one of the parameters did not exhibit positive wetland indicators, the area was determined to be upland unless the site was classified as an atypical situation, potential problem area, or special aquatic site, i.e. mud flat. In the case of constructed mitigation wetlands, hydric soils do not have to be present based on the timeframe required for soil development. The wetland boundary was identified on the 2011 aerial photography. Wetland areas reported were determined using geographic information system (GIS) methodology.

2.5. Wildlife

Observations and other positive indicators of mammal, reptile, amphibian, and bird species use within the project area were recorded on the wetland monitoring form during the site visit. Indirect use indicators, including tracks, scat, burrow, eggshells, skins, and bones, were also recorded. These signs were recorded while traversing the site for other required activities. Direct sampling methods,

such as snap traps, live traps, and pitfall traps, were not used. A comprehensive list of animal species observed in 2011 was compiled.

2.6. Functional Assessment

The 2008 MDT Montana Wetland Assessment Method was used to evaluate functions and values on the site in 2010 and 2011. This method provides an objective means of assigning wetlands an overall rating and provides regulators a means of assessing mitigation success based on wetland functions. Functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society and relate to ecological significance without regard to subjective human values (Berglund and McEldowney 2008).

Field data for this assessment were collected during the site visit. An MDT Montana Wetland Assessment Form was completed for four Assessment Areas (AAs) within the McGinnis Meadows mitigation site. The site was divided into Creation (excavated cells), Restoration (re-establishment and rehabilitation area), Enhancement (existing emergent wetland), and Preservation (existing riverine wetlands) AAs.

2.7. Photo Documentation

Monitoring at photo points provided supplemental information documenting wetland and upland conditions, site trends, current land use surrounding the site, and the vegetation transects. Photographs were taken at established photo points throughout the mitigation site during the 2011 site visit (Appendix C). Photo point locations were recorded with a resource grade GPS unit (Figure 2, Appendix A).

2.8. GPS Data

Site features and survey points were collected with a resource grade Garmin GPSMap 76CSX GPS (Global Positioning System) unit during the 2011 monitoring season. The collected data were then transferred to a personal computer, exported into GIS, and drawn in Montana State Plane Single Zone NAD 83 meters. In addition to GPS, some site features were hand-mapped onto the 2011 aerial photograph, then digitized. Mapped site features and survey points included fence boundaries, photograph points, transect beginnings and endings, wetland boundaries, and vegetation community boundaries.

2.9. Maintenance Needs

Channels, engineered structures, fencing, and other features were examined during the site visit for obvious signs of breaching, damage, or other problems. The examination was cursory and did not constitute an engineering-level structural inspection.

3. RESULTS

3.1. Hydrology

Climate data from the Libby 32 SSE, Montana (245020) weather station recorded an average total annual precipitation rate of 24.21 inches from April 1910 to December 2010 (WRCC 2011). Average precipitation from January to June was 12.75 inches for the period of record. The total precipitation recorded during this period for 2010 and 2011 was 10.68 inches and 14.13 inches, respectively (NCDC).

The project site was originally drained, filled and leveled, and the McGinnis Creek corridor channelized for agricultural purposes in the early to mid 1900's by ranchers and loggers in the area. This substantially altered the natural floodplain of the property. Mitigation efforts included the construction of a new McGinnis Creek channel with wide meanders across the entire site. McGinnis Creek bisects the project area. The McGinnis Creek watershed is approximately 10.2 square miles in area. Hydrologic connection between the creek and associated floodplain resulted in a high local groundwater table along the drainage. Overbank flooding events recharge surface depressions excavated within the floodplain along McGinnis Creek through the mitigation site. Groundwater, precipitation, overbank flooding of McGinnis Creek, and surface runoff from ephemeral drainages on adjacent slopes of the Kootenai Nation Forest maintain wetland hydrology throughout McGinnis Meadows. The constructed depressional areas were excavated to a shallow depth that would intercept high seasonal groundwater elevations. The average depth of surface water in areas of inundation across the site was estimated at 1.0 feet with a range of surface water depths from 0.0 to 3.0 feet. Approximately 10 percent of the entire site was inundated during the August site investigation and included the open water/aquatic macrophytes community and McGinnis Creek. The average depth at the emergent vegetation and open water boundary was 1.0 foot.

Groundwater levels were measured in three onsite wells (Figure 2, Appendix A) located within areas that were originally delineated as wetlands in 2005 and 2006. The groundwater levels were greater than 12 inches below the ground surface (bgs) in 2010 (Table 1). Groundwater elevations were higher in each of the 3 wells and within 1 foot of the ground surface at Well 1 in 2011.

Table 1. Groundwater depths measured in Wells 1, 2 and 3 in 2011.

Well Number	Groundwater Depth (feet bgs)	
	2010	2011
Well 1	1.5	0.7
Well 2	3.3	2.4
Well 3	3.7	2.8

Eight data points were sampled to determine the wetland and upland boundaries (Figure 2, Appendix A and Monitoring Forms, Appendix B). Data points M-1u, M-2u, M-4u, and M-6u were located in areas defined as upland. No wetland hydrological indicators were observed at these data points. Data points M-1w, M-3w, M-4w, and M-5w were located in areas delineated as wetland. Saturation at 10 inches bgs was the primary wetland hydrology indicator at M-1w, located adjacent to an excavated cell in the creation AA. Frost heave hummocks and a positive FAC-Neutral test were the hydrologic indicators as M-3W. Saturation to the surface and a groundwater table at 4 inches bgs provided positive indication of wetland hydrology at M-4w, also located within the creation AA near an excavated depression. Data point M-5w was located in the restoration AA of McGinnis Meadows and displayed saturation to the surface and a high groundwater table.

The flows through the McGinnis Meadows wetland mitigation site are dependent upon releases from a man-made lake located less than one mile south of the project site. Flows from this location are controlled by discharges through two, 24-inch equalizing pipes and a lower culvert that serves as a drain for the man-made impoundment. The new McGinnis Creek channel was constructed at a higher elevation than the incised abandoned channel to facilitate overbank flow from the creek and to elevate groundwater elevations across the site. Constructed pools and deep pockets were excavated in outside channel bends to improve fisheries habitat. The stream banks of McGinnis Creek were minimally disturbed during construction and primarily vegetated with sod-forming meadow foxtail (*Alopecurus pratensis*) and reed canary grass (*Phalaris arundinacea*) throughout the project site. Reed canary grass has a plant stability rating of 9, where 1 is the lowest and 10 is the highest (Winward 2000). The existing vegetation on the banks of the restored channel is expected to provide long-term stability and allow minimal lateral stream migration across the site.

Three baseline stream cross-sections were surveyed in 2010 at permanent locations marked with bank pins to assess bank stability and lateral migration throughout the monitoring period. The cross-section locations are shown on Figure 2 (Appendix A). These stream cross-sections were again surveyed in 2011. The results of the cross-section surveys are presented on Charts 1 through 3. Photographs of the cross-sections are shown on pages C-8 through C-11 of Appendix C and illustrate a dramatic difference in vegetation cover following construction. A minimal amount of vertical or lateral migration was observed along the newly constructed stream in 2011. Results of the cross-section surveys indicate that no major adjustments occurred at the permanent monitoring locations during the 2011 spring runoff. Minor variations displayed in the charts below are possibly attributed to varying surveyed stations along each cross section and most likely do not reflect actual changes in stream geometry.

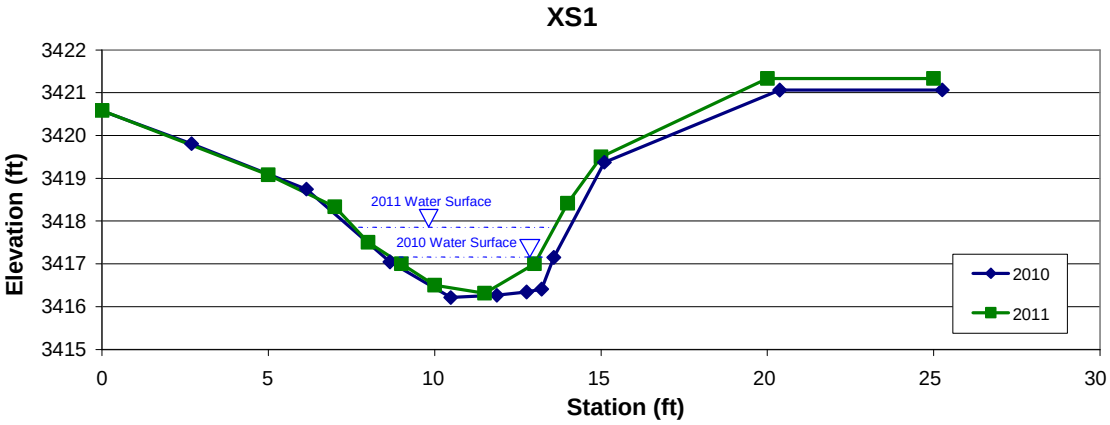


Chart 1. McGinnis Creek stream cross-section one.

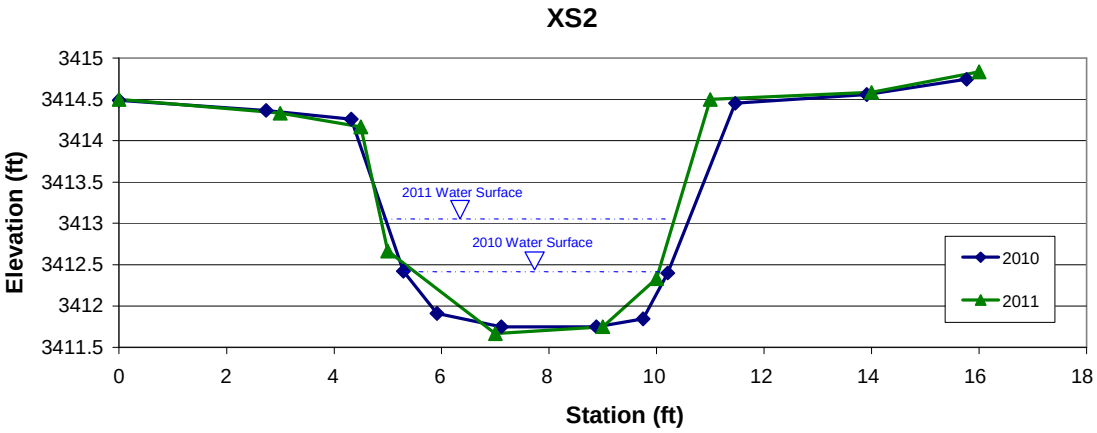


Chart 2. McGinnis Creek stream cross-section two.

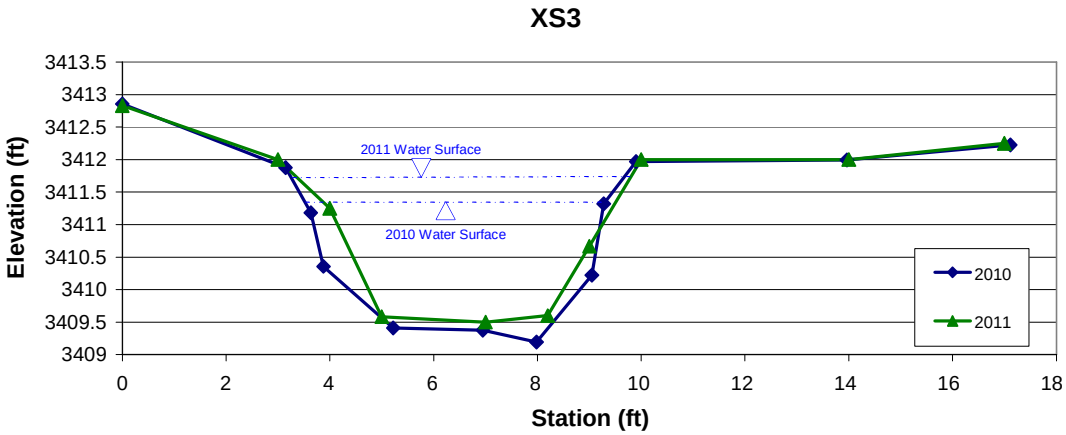


Chart 3. McGinnis Creek stream cross-section three.

3.2. Vegetation

Vegetation plant communities were identified by plant composition, topography, and hydrology. A comprehensive list of 140 plant species identified at the McGinnis Meadows Wetland Mitigation Site during the 2010 and 2011 monitoring efforts are listed in Table 2 and on the Mitigation Monitoring Form (Appendix B). Eleven vegetation communities have been identified in 2011 (Figure 3 in Appendix A). The wetland boundary bisected one community, Type 7 – *Phalaris arundinacea*/*Alopecurus pratensis*, based on variations of wetland hydrology and hydric soil indicators within this community. The additional vegetation communities include wetland Type 1 – *Alopecurus pratensis*/*Phalaris arundinacea*, wetland Type 2 – Open Water/Aquatic Macrophytes, upland Type 4 – *Picea engelmannii*/*Alopecurus pratensis*, wetland Type 6 – *Carex utriculata*, wetland Type 9 – *Phalaris arundinacea*/*Carex* spp., wetland Type 11 – *Alnus incana*/*Phalaris aruninacea*, upland Type 12 – Bare ground soil mounds, wetland Type 13 – *Deschampsia cespitosa*/*Glyceria grandis*, and upland Type 14 – *Alopecurus pratensis*/*Pseudotsuga menziesii*.

Wetland vegetation community Type 1 – *Alopecurus pratensis/Phalaris arundinacea* was identified areas adjacent to McGinnis Creek. Meadow foxtail (*Alopecurus pratensis*) dominated this community with lesser amounts of reed canary grass (*Phalaris arundinacea*). Forty-nine secondary species were identified within this community at five percent cover or less (Mitigation Monitoring Form – Appendix B).

The wetland community Type 2 – Open Water/Aquatic Macrophytes has developed within the deeper areas of the excavated depressions and were characterized by open water during the August field survey. Vegetation established within these inundated areas included reed canary grass, American mannagrass (*Glyceria grandis*), green algae, and thirty-five other species with trace cover class.

Upland Type 4 – *Picea engelmannii/Alopecurus pratensis* represented two small upland forests located in the southeast corner of the property that contained a high percent cover of Canada thistle (*Cirsium arvense*). Woody species included Englemann spruce (*Picea engelmannii*), lodgepole pine *(Pinus contorta*), and creeping barberry (*Mahonia repens*). Meadow foxtail and reed canary grass dominated the understory. Thirty-six secondary species were identified within this community at five percent cover or less.

Table 2. Comprehensive list of plant species identified in 2010 and 2011.

SCIENTIFIC NAME	COMMON NAME	REGION 9 STATUS[1]
Abies lasiocarpa	fir,subalpine	FACU
Achillea millefolium	yarrow,common	FACU
Agropyron repens	quackgrass	FACU
Agrostis interrupta	dense silkybent	NL
Agrostis scabra	bentgrass,rough	FAC
Agrostis stolonifera	bentgrass,spreading	FAC+
Algae, green	**algae, green**	**NL**
Alnus incana	alder,speckled	FACW
Alnus sinuata	**Sitka alder**	**FACW**
Alopecurus aequalis	foxtail,short-awn	OBL
Alopecurus pratensis	foxtail,meadow	FACW
Amelanchier alnifolia	service-berry,Saskatoon	FACU
Antennaria rosea	rosy pussy toes	NL
Arctostaphylos uva-ursi	bearberry	FACU-
Arnica chamissonis	arnica,leafy	FACW
Aster hesperius	**aster, siskiyou**	**OBL**
Aster sp.		NL
Beckmannia syzigachne	**sloughgrass,American**	**OBL**
Bromus carinatus	**California brome**	**NL**
Bromus inermis	**smooth brome**	**NL**
Calamagrostis canadensis	reedgrass,blue-joint	FACW+
Calamagrostis rubescens	pinegrass	NL
Campanula rotundifolia	**bellflower,Scotch**	**FACU+**
Capsella bursa-pastoris	**purse,common Shepherd's**	**FAC-**
Cardamine pensylvanica	bitter-cress,Pennsylvania	FACW
Carex aquatilis	sedge,water	OBL
Carex athrostachya	sedge,slender-beak	FACW
Carex bebbii	sedge,Bebb's	OBL
Carex microptera	**sedge,small-wing**	**FAC**
Carex nebrascensis	sedge,Nebraska	OBL
Carex pachystachya	sedge,thick-head	FAC
Carex petasata	Liddon sedge	NL
Carex praticola	**sedge,northern meadow**	**FACW**
Carex sp.		NI
Carex stipata	awlfruit sedge	NL
*Carex utriculata**	beaked sedge	OBL
Centaurea maculosa	spotted knapweed	NL
Cerastium fontanum	common mouse-eared chickweed	NL
Ceratophyllum demersum	**hornwort,common**	**OBL**
Chenopodium album	goosefoot,white	FAC
Cicuta douglasii	**water-hemlock,western**	**OBL**
Cirsium arvense	thistle,Canada	FACU+
Cirsium vulgare	thistle,bull	FACU
Convolvulus arvensis	field bindweed	NL
Crataegus douglasii	hawthorn,Douglas'	FAC

New species indentified in 2011 are shown in **bold** type.

[1]Region 9 (Northwest) (Reed 1988).

*Commonly accepted name not included in 1988 list.

Table 2 (Continued). Comprehensive list of plant species identified in 2010 and 2011.

SCIENTIFIC NAME	COMMON NAME	REGION 9 STATUS[1]
Cynoglossum officinale	gypsy-flower	NL
Dactylis glomerata	**grass,orchard**	**FACU**
Deschampsia cespitosa	hairgrass,tufted	FACW
Descurainia sophia	common tansymustard	NL
Eleocharis palustris	**spikerush,creeping**	**OBL**
Elymus glaucus	**wild-rye,blue**	**FACU**
Elymus trachycaulus	slender wheatgrass	NL
Epilobium ciliatum	willow-herb,hairy	FACW-
Epilobium palustre	**willow-herb,marsh**	**OBL**
Equisetum arvense	horsetail,field	FAC
Equisetum sp.		NI
Erysimum cheiranthoides	wormseed wallflower	NI
Erysimum cheiranthoides	wallflower,worm-seed	FACU
Fragaria virginiana	strawberry,Virginia	UPL
Galium trifidum	**bedstraw,small**	**FACW+**
Galium triflorum	bedstraw,sweet-scent	FACU
Geum macrophyllum	avens,large-leaf	FACW+
Glyceria borealis	grass,small floating manna	OBL
Glyceria grandis	**American mannagrass**	**NL**
Glyceria striata	**grass,fowl manna**	**OBL**
Gnaphalium palustre	cudweed,western marsh	FAC+
Heracleum sphondylium	cow-parsnip,American	NI
Hordeum brachyantherum	barley,meadow	FACW
Juncus articulatus	**rush,jointed**	**OBL**
Juncus bufonius	rush,toad	FACW+
Juncus confusus	**rush,Colorado**	**FAC**
Juncus effusus	rush,soft	FACW+
Juncus ensifolius	rush,three-stamen	FACW
Juncus longistylis	**rush,long-style**	**FACW**
Juncus nevadensis	**rush,Sierra**	**FACW**
Juncus tenuis	rush,slender	FAC
Larix occidentalis	larch,western	FACU+
Mahonia repens	creeping barberry	NL
Maianthemum stellatum	starry false lily-of-the-valley	NL
Medicago lupulina	medic,black	FAC
Mentha arvensis	mint,field	FAC
Mimulus guttatus	monkey-flower,common large	OBL
Montia linearis	narrowleaf minerslettuce	NL
Myosotis micrantha	strict forget-me-not	NL
Myriophyllum spicatum	**water-milfoil,eurasian**	**OBL**
Penstemon confertus	yellow penstemon	NL
Phalaris arundinacea	grass,reed canary	FACW

New species indentified in 2011 are shown in **bold** type.

[1]Region 9 (Northwest) (Reed 1988).

*Commonly accepted name not included in 1988 list.

Table 2 (Continued). Comprehensive list of plant species identified in 2010 and 2011.

SCIENTIFIC NAME	COMMON NAME	REGION 9 STATUS[1]
Phleum pratense	timothy	FACU
Picea engelmannii	spruce,Engelmann's	FAC
Pinus contorta	pine,lodge-pole	FAC-
Pinus ponderosa	pine,ponderosa	FACU-
Plantago major	plantain,common	FAC+
Poa palustris	bluegrass,fowl	FAC
Poa pratensis	bluegrass,Kentucky	FACU+
Poa sp.		NL
Polygonum amphibium	smartweed,water	OBL
Polygonum douglasii	**knotweed,Douglas'**	**FACU**
*Populus tremuloides**	quaking aspen	FAC+
Potentilla anserina	silverweed	OBL
Potentilla gracilis	cinquefoil,northwest	FAC
Potentilla norvegica	cinquefoil,Norwegian	FAC
Potentilla palustris	cinquefoil,marsh	OBL
Potentilla recta	sulfur cinqufoil	NL
Prunella vulgaris	heal-all	FACU+
Pseudotsuga menziesii	**Douglas-fir**	**NI**
Puccinellia angustata	**narrow alkaligrass**	**NI**
Ranunculus aquatilis	butter-cup,white water	OBL
Rorippa palustris	yellow-cress,bog	OBL
Rosa woodsii	**rose,Woods**	**FACU**
Rubus idaeus	**raspberry,common red**	**FACU**
Rumex acetosella	sorrel,sheep	FACU
Rumex crispus	dock,curly	FACW
Salix sp.		NI
Scirpus microcarpus	bulrush,small-fruit	OBL
Scutellaria galericulata	skullcap,hooded	OBL
Senecio hydrophilus	groundsel,water	OBL
Senecio pseudaureus	groundsel,golden	FACW
Silene menziesii	campion,Menzies'	FAC
Sisymbrium altissimum	mustard,tall tumble	FACU-
Stellaria longifolia	starwort,long-leaf	FACW
Symphoricarpos albus	snowberry	FACU
Symphyotrichum laeve	smooth blue aster	NL
Symphyotrichum lanceolatum	**white panicle aster**	**NI**
Tanacetum vulgare	**tansy,common**	**NL**
Taraxacum officinale	dandelion,common	FACU
Thlaspi arvense	penny-cress,field	NI
Tragopogon dubius	**yellow salsify**	**NL**
Trifolia aureum	golden clover	NL
Trifolium hybridum	**clover,alsike**	**FACU+**
Trifolium repens	clover,white	FACU+
Triglochin maritimum	**arrow-grass,seaside**	**OBL**

New species indentified in 2011 are shown in **bold** type.

[1]Region 9 (Northwest) (Reed 1988).

*Commonly accepted name not included in 1988 list.

Table 2 (Continued). Comprehensive list of plant species identified in 2010 and 2011.

SCIENTIFIC NAME	COMMON NAME	REGION 9 STATUS[1]
Typha latifolia	cattail,broad-leaf	OBL
Urtica dioica	nettle,stinging	FAC+
Vaccinium cespitosum	**dwarf bilberry**	**FACU**
Verbascum thapsus	common mullein	NL
Veronica americana	speedwell,American	OBL
Veronica peregrina	speedwell,purslane	OBL
Veronica scutellata	speedwell,marsh	OBL
Veronica serpyllifolia	speedwell,thyme-leaf	FAC
Viola adunca	violet,hooked-spur	FAC
Viola sp.		NI

New species indentified in 2011 are shown in **bold** type.

[1]Region 9 (Northwest) (Reed 1988).

Wetland community Type 5 – *Phalaris arundinacea/Alnus incana* was a scrub-shrub speckled alder (*Alnus incana*) and Douglas hawthorn (*Crataegus douglasii*) community located near the southwest property corner. Reed canary grass and meadow foxtail, aggressive native species, dominated the understory. American cow-parsnip (*Heracleum sphondylium*), water groundsel (*Senecio hydrophilus*), and six other species were identified in this 1.9 acre community.

Wetland Type 6 – *Carex utriculata* was identified in a small remnant ditch located in the southwest property corner. Beaked sedge (*Carex utriculata)* dominated the community.

Community Type 7 – *Phalaris arundinacea/Alopecurus pratensis* dominated the vegetation in areas adjacent to the pre-existing wetlands throughout the site. The wetland boundary split a portion of this community based on various hydric and hydrologic indicators present in 2011. Although this community exhibits similar species composition throughout the polygons defined in Figure 3 (Appendix A), some portions of this community were classified as upland (Type 7u) and the remaining as wetland (Type 7w). These areas were not included in the original wetland delineation and suggest that the community may trend toward wetland development as a result of a slight increase in seasonal groundwater elevation within the site. Reed canary grass and meadow foxtail dominated the community. Fifty-two secondary species were identified within this community.

Wetland Type 9 – *Phalaris arundinacea/Carex* spp. covered the northwest corner of the mitigation site and included roughly five acres of the rehabilitation AA. The community was dominated by reed canary grass. Bebb's sedge (*Carex bebbii*), water sedge (*Carex aquatilis*), beaked sedge, and fourteen other species were present within the community.

Wetland Type 11 – *Alnus incana*/*Phalaris arundinacea* was identified in the ditch (abandoned McGinnis channel) that traverses the property north to south. Speckled alder, reed canary grass, and Canada thistle dominated the vegetation. The vegetation cover included one to five percent each of meadow foxtail, spreading bentgrass (*Agrostis stolonifera*), and small floating manna grass (*Glyceria borealis*) and trace amounts of thirty-two other species.

Upland Type 12 – Bare ground soil mounds were constructed throughout the site and were originally planted with shrubs and trees. Elk and moose browsed these areas heavily leading to a high mortality rate for the planted species. Bare ground encompassed over 50 percent of total cover within this community. The dominant vegetation species included meadow foxtail and Canada thistle, each recorded at one to five percent cover. Six other species were identified in trace amounts within these mounds.

Wetland community Type 13 – *Deschampsia cespitosa*/*Glyceria grandis* was identified around the margins of the constructed wetland cells and represented areas periodically inundated for brief periods during the early growing season with soil saturation persisting into the summer. Tufted hairgrass (*Deschampsia cespitosa*) and American mannagrass were the dominant vegetation species with 64 other species identified with low cover classes. Bare ground occupied 21 to 50 percent of the community.

Upland community Type 14 – *Alopecurus pratensis*/*Psuedotsuga menziesii* was located in the southwest corner of the project site. Douglas fir (*Psuedotsuga menziesii*), lodgepole pine, and western larch (*Larix occidentalis*) dominated the overstory. Woody species present within the understory included snowberry (*Symphoricarpus albus*), speckled alder, creeping barberry, and dwarf bilberry (*Vaccinium caespitosum*). Meadow foxtail dominated the herbaceous understory.

Polygon 15 in Figure 3 (Appendix A) represents the open water channel of McGinnis Creek.

The data collected for Transect 1 is summarized in Table 3 and graphed in Charts 4 and 5. Transect 1 crossed two excavated wetland basins. The transect intersected four communities, Type 1 - *Alopecurus pratensis*/*Phalaris arundinacea*, Type 2 – Open Water/Aquatic Macrophytes, Type 7 – *Phalaris arundinacea/Alopecurus pratensis*, and Type 13 – *Deschampsia cespitosa*/*Glyceria grandis*, an increase of two communities from 2010. The bare ground present in 2010 from the recent excavation of the wetland cells had developed into the Type 13 community on either side of the inundated Type 2 community and resulted in the 34.9 percent increase in hydrophytic vegetation communities along this transect. Increased inundation levels observed in 2011 resulted in a 32.3 percent increase of open water. A substantial decrease (67.3 percent) of upland communities was mapped along this transect 1 in 2011.

Table 3. Data summary for Transect 1 in 2011 at the McGinnis Meadows Wetland Mitigation Site.

Vegetation Community Transitions along Transect	5	7
Vegetation Communities along Transect	2	4
Hydrophytic Vegetation Communities along Transect	0	3
Total Vegetative Species	43	59
Total Hydrophytic Species	30	37
Total Upland Species	13	22
% Transect Length Comprising Hydrophytic Vegetation Communities	0.0	91.8
% Transect Length Comprising Upland Communities	75.4	8.1
% Transect Length Comprising Unvegetated Open Water	24.6	0.0
% Transect Length Comprising Bare Substrate	29.3*	0

*Percent Bare Substrate calculated from total length of Type 3 along transect multiplied by bare ground cover in Type 3 community.

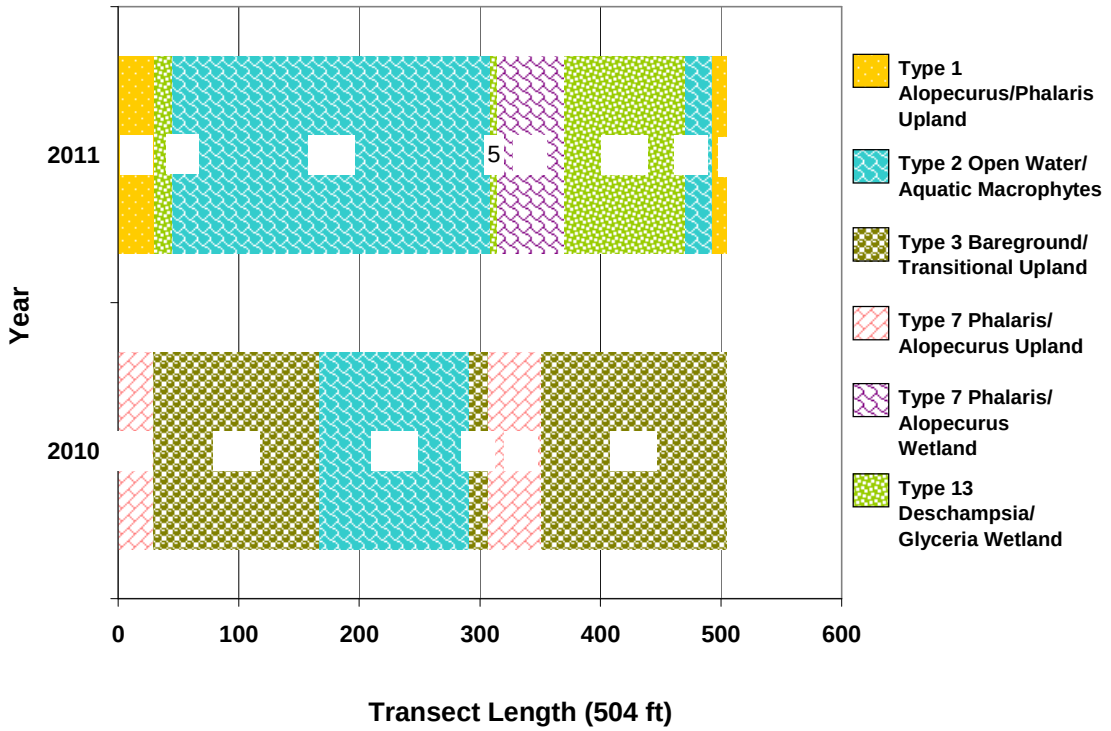


Chart 4. Transect map showing community types on Transect 1 in 2011 from start (0 feet) to finish (504 feet) in 2010 and 2011.

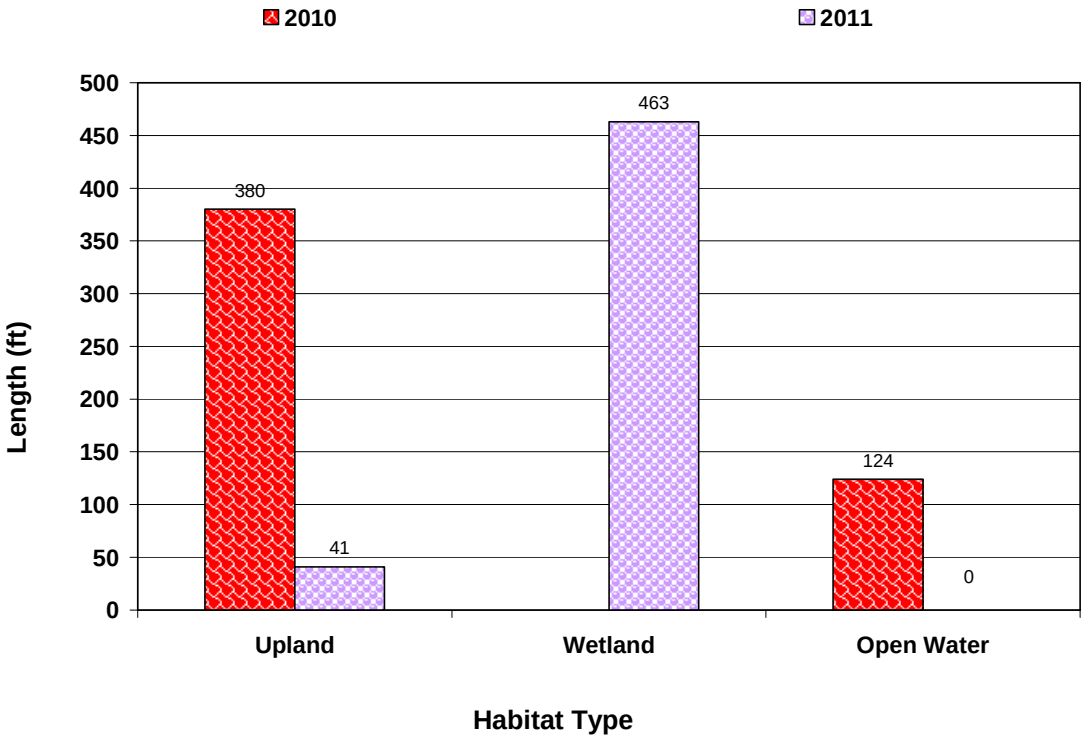


Chart 5. Length of habitat types within Transect 1 in 2010 and 2011.

Transect 2 was 1000 feet in length and extended from the center of the property north to the site boundary. This transect crossed the newly constructed McGinnis Creek channel twice and intersected five vegetation communities, Type 2 – Open Water/Aquatic Macrophytes (excavated swale and depression), the upland phase of Type 7 – *Phalaris arundinacea/Alopecurus pratensis*, the wetland phase of Type 7, Type 9 – *Phalaris arundinacea/Carex* spp., and Type 13 – *Deschampsia cespitosa/Glyceria grandis*. Eighteen transitions occurred along this transect and offered a representation of the mosaic wetland complex constructed at McGinnis Meadows. Forty-nine vegetation species were identified along this transect. A 26.8 percent decrease in transect length comprising upland communities was observed in 2011, a positive trend in wetland development following site construction in 2009. The twelve feet of open water habitat noted in Chart 7 represents the two six-foot stream crossings of the constructed channel. Hydrophytic vegetation communities accounted for 91 percent of this transect.

Table 4. Data summary for Transect 2 in 2011 at the McGinnis Creek Wetland Mitigation Site.

Monitoring Year	2010	2011
Transect Length (feet)	**1000**	**1000**
Vegetation Community Transitions along Transect	14	18
Vegetation Communities along Transect	4	5
Hydrophytic Vegetation Communities along Transect	3	4
Total Vegetative Species	44	49
Total Hydrophytic Species	29	38
Total Upland Species	15	11
% Transect Length Comprising Hydrophytic Vegetation Communities	63.5	91.0
% Transect Length Comprising Upland Communities	34.6	7.8
% Transect Length Comprising Unvegetated Open Water	1.9	1.2
% Transect Length Comprising Bare Substrate	5*	0

*Percent Bare Substrate calculated from total length of Type 3 along transect multiplied by bare ground cover in Type 3 community.

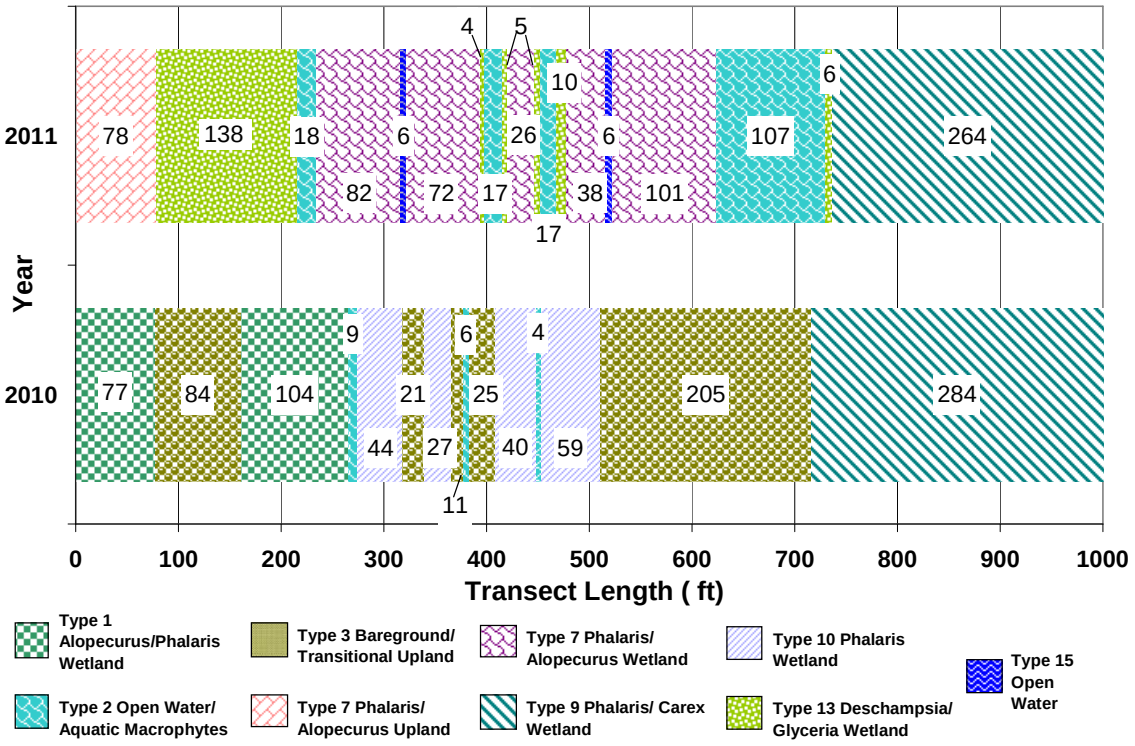


Chart 6. Transect map showing community types on Transect 2 in 2011 from start (0 feet) to finish (1000 feet) in 2010 and 2011.

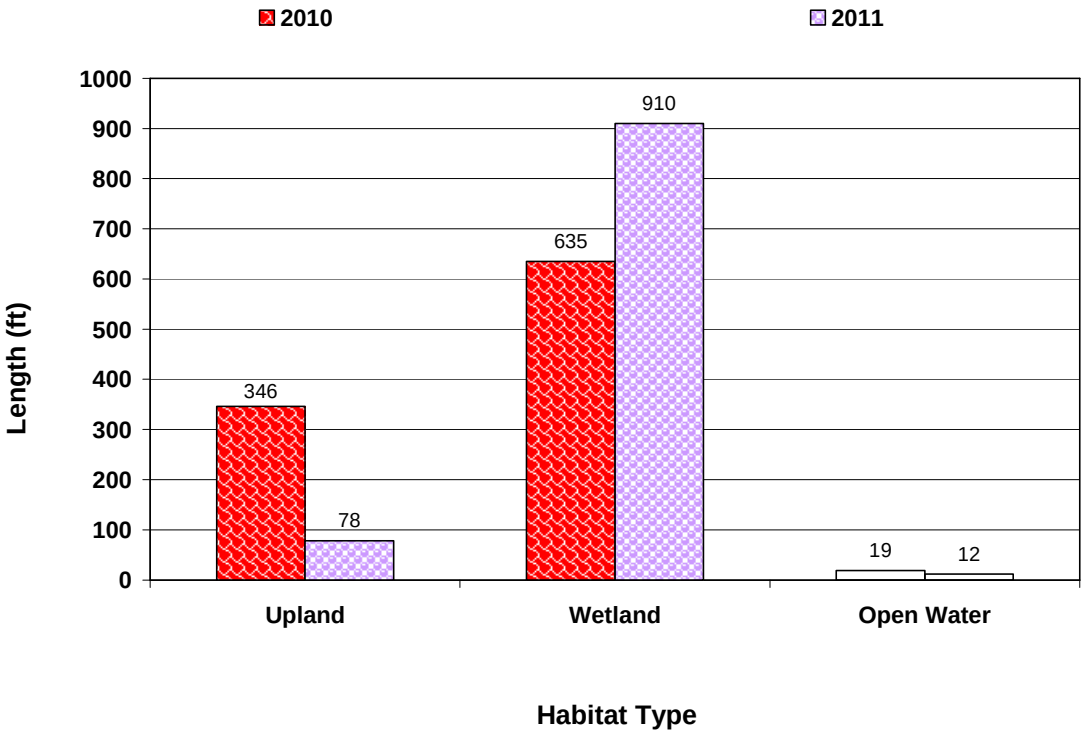


Chart 7. Length of habitat types within Transect 2 in 2011.

Priority 2B noxious weeds were identified at the McGinnis Creek Mitigation Site. Several Canada thistle (*Cirsium arvense*) infestations were recorded across the site. Infestations ranged in size from less than 0.1 acre to 5 acres in size with cover classes from trace (less than 1 percent) to high (25 to 100 percent cover). Infestations were mapped primarily in areas disturbed during the construction of the site, and lesser amounts in established communities with no recent disturbance.

The skeletons of numerous containerized woody species were observed across the site in 2010 following the initial planting efforts. The majority had been planted on the upland islands of the enhancement area. The survival was low as a result of heavy wildlife browse and traffic, and the installation of woody material that did not meet MDT specifications. Initial survival was estimated at less than 10 percent. Additional woody species were planted in spring 2011. Planted woody success was difficult to determine in 2011 as a result of robust vegetation cover throughout the entire site. Eight alder (*Alnus* sp.), three red osier dogwood (*Cornus sericea*), ten aspen (*Populus tremuloides*), and five planted willows were observed alive in 2011.

3.3. Soil

The project site is mapped in the Lincoln County Soil Survey (USDA 2010) as Fluvents, found on floodplains in mixed alluvium. These soil types are excessively drained, gravelly silt loams taxonomically classified as a sandy, mixed, frigid Typic Udifluvents and are considered hydric.

Eight test pits were profiled throughout the McGinnis Meadows mitigation site in 2011. Four of the test pits met all three criteria for wetlands. Soil at data point M-1w was a black (10YR 2/1) silty loam with dark yellowish brown (10YR 4/4) redox concentrations in the matrix. Soils at M-3w exhibited a thick dark surface (10YR 2/1). Soils at M-4w were a very dark brown (10YR 2/2) silty clay with dark yellowish brown redox concentrations. The soil profile at M-5w was a clay loam with similar colors to M-1w. Three of the three soil profiles located in wetlands met the F6 criteria for redox dark surface and one profile was determined to meet the A12 thick dark surface indicator. Additionally, the test pit at M-1u met the F6 hydric criteria. The test pits at M-2u, M-4u, and M-6u did not meet the hydric criteria for wetland soils and generally exhibited a dark upper horizon that lacked redox features. In general, the soils evaluated within the McGinnis Meadows project area did not confirm the NRCS mapped series.

3.4. Wetland Delineation

Eight data points were sampled to define the vegetation, soil, and hydrology of site wetlands (Figure 2, Appendix A). Completed wetland data forms are located in Appendix B. The August 7, 2011 delineation identified and mapped a total of 21.39 acres of aquatic habitat within the 32.75 acre project area. Aquatic habitats present on the site included 0.75 acres of open water channel (McGinnis Creek) and 20.64 acres of depression and riverine wetlands with emergent and shrub-scrub vegetation (Table 5). Some areas identified as existing wetlands in the 2010 report were classified as upland in 2011 based on the lack of wetland hydrology indicators and included an area within vegetation community Type 1 along the south boundary of the site and a portion of community Type 7. Additional areas developed wetland characteristics in 2011 and primarily included the disturbed areas around the perimeter of the excavated cells that did not meet the criteria for wetland vegetation in 2010.

Table 5. Total aquatic habitat delineated in 2011.

Habitat	2010	2011
Open Water (acres)	1.00	0.00
McGinnis Creek - open water (acres)	0.75*	0.75*
Vegetated Wetlands (acres)	18.22	20.64
Total Aquatic Habitat (acres)	**19.22**	**20.64**

*Stream Credit being sought for McGinnis Creek, acreage excluded from total.

3.5. Wildlife

A comprehensive list of animal species observed directly or indirectly during the 2010 and 2011 monitoring visits is presented in Table 6**.** Species identified in 2011 included several Columbia spotted frogs, 25 bank swallows, Canada Geese, a common sandpiper, 4 gadwalls, 1 mallard, a Wilson's snipe, abundant tracks of several unidentified deer, 3 white-tailed deer, and one moose.

Table 6. Wildlife species observed at the McGinnis Creek Mitigation Site in 2011.

Common Name	Scientific Name
AMPHIBIAN	
Columbia Spotted Frog	***Rana luteiventris***
BIRDS	
American Robin	*Turdus migratorius*
Bank Swallow	***Riparia riparia***
Black-billed Magpie	*Pica hudsonia*
Canada Goose	***Branta canadensis***
Common Raven	*Corvus corax*
Common sandpiper	***Actitis hypoleucos***
Evening Grosbeak	*Coccothraustes vespertinus*
Gadwall	***Anas strepera***
Mallard	***Anas platyrhynchos***
Mountain Bluebird	*Sialia currucoides*
Red-tailed Hawk	*Buteo jamaicensis*
Unknown Flycatcher	
Wilson's Snipe	***Gallinago delicata***
MAMMAL	
Deer	
Gray Wolf	*Canis lupus*
Moose	***Alces americanus***
White-tailed Deer	***Odocoileus virginianus***
REPTILE	
Common Gartersnake	*Thamnophis sirtalis*

Species indentified in 2011 are listed in **bold.**

3.6. Functional Assessment

Functional assessments were completed on four AAs in 2010 and 2011 using the 2008 MWAM and are summarized in Table 7. The site was divided into Creation (excavated cells – 6.42 acres), Restoration (re-establishment and rehabilitation – 12.60 acres), Enhancement (existing emergent wetland – 1.32 acres), and Preservation (existing riverine wetlands – 0.30 acres) (Figure 4 in Appendix A). Acres within each AA changed between 2010 and 2011 based on wetland development within the creation AA and slight decreases in wetland areas within the restoration and enhancement AA.

According to the 2005 site evaluation, wetlands on the site were described as highly disturbed, largely the result of grazing, leveling, channel straightening, and associated impacts to hydrology. Wetlands were rated as Category III by David, Evans & Associates using the 1999 MDT Wetland Assessment Method.

Table 7. Functions and Values of McGinnis Creek wetlands.

Function and Value Parameters 2008 MDT Montana Wetland Assessment Method[1]	2010 Creation (Excavated Cells)	2011 Creation (Excavated Cells)	2010 Restoration (Re-establishment-McGinnis Creek and Rehabilitation-existing wet meadow)	2011 Restoration (Re-establishment-McGinnis Creek and Rehabilitation-existing wet meadow)	2010 Enhancement (Existing emergent wetland)	2011 Enhancement (Existing emergent wetland)	2010 Preservation (Existing riverine wetlands)	2011 Preservation (Existing riverine wetlands)
Listed/Proposed T&E Species Habitat	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)
MTNHP Species Habitat	Low (0.1)	Low (0.1)	Mod (0.6)	Mod (0.6)	Low (0.1)	Low (0.1)	Low (0.1)	Low (0.1)
General Wildlife Habitat	Low (0.3)	High (0.9)	Mod (0.7)	High (0.9)	Mod (0.5)	Mod (0.5)	Mod (0.7)	High (0.9)
General Fish/Aquatic Habitat	NA	NA	Mod (0.7)	High (0.8)	NA	NA	NA	NA
Flood Attenuation	Mod (0.6)	Mod (0.6)	Mod (0.5)	High (0.8)	Mod (0.6)	Mod (0.6)	High (0.9)	High (0.9)
Short and Long Term Surface Water Storage	Low (0.3)	High (1.0)	High (1.0)	High (1.0)	Low (0.3)	Low (0.1)	Mod (0.4)	High (0.8)
Sediment/Nutrient/Toxicant Removal	Mod (0.7)	Mod (0.7)	High (0.9)	High (0.9)	High (1.0)	High (0.8)	High (1.0)	High (1.0)
Sediment/Shoreline Stabilization	NA	Mod (0.7)	Low (0.3)	Mod (0.7)	NA	NA	High (1.0)	High (1.0)
Production Export/ Food Chain Support	Low (0.3)	High (0.8)	High (0.9)	Exc. (1.0)	Mod (0.4)	Low(0.3)	Mod (0.5)	Mod(0.7)
Groundwater Discharge/Recharge	Mod (0.7)	High (1.0)	High (1.0)	High (1.0)	Mod (0.7)	NA	High (1.0)	High (1.0)
Uniqueness	Low (0.1)	Mod (0.4.)	Low (0.3)	Mod (0.4)	Low (0.3)	Mod (0.4)	Low (0.3)	Mod (0.4)
Recreation/Education Potential (bonus points)	Low (0.05)	High (0.15)	Low (0.05)	High (0.15)	Low (0.05)	High (0.15)	Low (0.05)	High (0.15)
Actual Points / Possible Points	**3.45/9**	**6.65 / 10**	**7.25/11**	**8.55 / 11**	**4.25/9**	**3.25 / 8**	**6.25/10**	**7.25 / 10**
% of Possible Score Achieved	**38.3**	**66.5**	**65.9**	**77.7**	**47.2**	**40.6**	**62.5**	**72.5**
Overall Category	**III**	**II**	**III**	**II**	**III**	**III**	**III**	**II**
Acreage of Assessed Aquatic Habitats within Easement (ac)	**0.20**	**6.42**	**16.57**	**12.60**	**1.74**	**1.32**	**0.30**	**0.30**
Functional Units (acreage x actual points) (f^1-)	**0.69**	**42.69**	**120.13**	**107.73**	**7.40**	**4.29**	**1.88**	**2.18**

[1]Berglund and McEldowney 2008 MDT MWAM.

Approximately 6.19 acres have developed within the created cells that were located in areas identified as uplands in the baseline delineation. An additional 0.23 acres of riparian wetland associated with the abandoned ditch has been incorporated into the created AA previously associated with the abandoned ditch targeted for preservation. The preservation AA along this ditch was initially identified as 0.3 acres. The 2011 delineation identified 0.53 acres of wetland associated with this riverine wetland and presumably 0.23 acres of additional wetland habitat has developed as a result of the increased local water table. The total acreage of this AA is 6.42. As expected, the cover of wetland vegetation increased within the footprints of the excavated cells. These areas exhibited inundation and/or saturation of the soil within 12 inches of the surface during the 2011 evaluation. The creation AA received 66.5 percent of the total possible points, nearly a two-fold increase from 2010. Ratings were high for general wildlife habitat, short and long-term surface water storage, groundwater discharge/recharge, and recreation/education potential.

The restoration/rehabilitation of the existing wet meadow received 77.73 percent of the total possible with high ratings for general wildlife habitat, shore and long term surface water storage, sediment/nutrient/toxicant removal, production/export/food chain support, groundwater discharge/recharge and recreation/education potential. Based on the wetland delineation conducted in 2011, this AA decreased in size by 4.60 acres to 12.60 acres.

The enhanced existing emergent wetland located at the south edge of the site also decreased in size by 0.42 acres in 2011. This 1.32-acre AA received 40.63 percent of the total possible points. Woody species were planted to improve the structural diversity of the enhancement area. The initial success of the planting effort has been marginal due to heavy wildlife browse. Supplemental woody plants were installed in spring 2011 and may eventually contribute to structural diversity as these plants develop.

Preservation of the existing riverine wetlands along the abandoned ditch (0.30 acre) received 72.5 percent of the total and high ratings in general wildlife habitat, flood attenuation, short and long term surface water storage, sediment/nutrient/toxicant removal, sediment/shoreline stabilization, groundwater discharge/recharge, and recreation/education potential.

3.7. Photo Documentation

Photographs taken at photo points one through seven (PP1 through PP7, Figure 2, Appendix A) are shown on pages C-1 to C-5 of Appendix C. Transect end points are shown on page C-6 and C-7. The stream cross-sections are presented on pages C-7 through C-12 and photos of data points are included on pages C-12 and C-13.

3.8. Maintenance Needs

Priority 2B noxious weeds were identified at the McGinnis Creek Mitigation Site (Figure 3 in Appendix A). Several Canada thistle (*Cirsium arvense*) infestations

were recorded across the site. Infestations ranged in size from less than 0.1 acre to 5.0 acres in size with cover classes from trace (less than 1 percent) to high (25 to 100 percent cover). Infestations were mapped primarily in areas disturbed during construction of the site, and lesser amounts in established communities with no recent disturbance.

No man-made nesting structures have been installed on site. The design of this mitigation site relied on excavating shallow depressions to intercept groundwater, increased hydrologic connectivity with McGinnis Creek and the adjacent floodplain, and to passively increase the local water table; therefore, no water control structures had been incorporated into this mitigation design. All fencing surrounding the perimeter of the site was intact. Aside, from on-going weed control no maintenance needs were identified in 2011.

3.9. Current Credit Summary

Goals for the McGinnis Meadows mitigation project included the restoration (re-establishment and rehabilitation) of approximately 0.8 acres of riparian/stream habitat (McGinnis Creek), 17.3 acres of degraded wetlands, creation of 2.9 acres of new emergent wetlands, enhancement of 1.74 acres of emergent wetlands and intermittent drainage, preservation of 0.3 acres of existing riparian communities along the abandoned McGinnis Creek corridor, and protection of 2.2 acres of upland buffer. The project credit ratios approved by the USACE and the 2011 estimated credits are shown in Table 9.

The areas delineated as wetlands within the created cells met the criteria for vegetation, soil, and hydrology. These areas exhibited increased wetland vegetation cover in 2011. The acreage of the created wetland cells substantially exceeded the anticipated 2.90 acres proposed in the 2009 MDT Mitigation Plan. The 2011 credits calculated for this AA was 6.42. The proposed credit acres presented in this plan for preservation (0.30 acres) were used to determine the allowable 2011 credit estimates. Approximately 0.53 acres were delineated along this riverine wetland in 2011. These additional 0.23 acres were included within the created AA as this increase in acreage was attributed to wetland development in response to an increased water table elevation. A decrease in wetland acreage was noted within the enhancement AA that included existing emergent wetland along the southern and southwestern boundary of the property up gradient from the channel restoration area. The 2011 wetland delineation defined 1.32 acres of wetland within this AA. Applying the USACE approved 3:1 ratio to this area netted 0.44 acres of wetland credit in 2011. Approximately 12.60 acres of wetland were identified within the restoration (rehabilitation) AA in 2011. This area included the pre-existing impaired reed canary grass wet meadow. The 2011 credit ratio estimated for this AA totaled 8.40 acres. The restored McGinnis Creek channel encompassed 0.75 acres of riverine habitat. Stream credit is being sought by MDT for the restoration of McGinnis Creek and

Table 8. 2011 Summary of Wetland Credits for McGinnis Meadows wetland mitigation site.

Proposed Mitigation Activity	Compensatory Mitigation Type	COE Mitigation Ratios	Proposed Acres	Final Credit Estimate (Acres)	2010 Delineated Acreage	2010 Credit (acres)	2011 Delineated Acreage	2011 Credit (acres)
Creation of palustrine emergent depression wetlands through shallow excavation.	Creation	1:1	2.90	2.90	0.20	0.20	6.42	6.42
Restoration/Re-establishment of the McGinnis Creek Channel and wetland fringe.	Restoration (Re-Establishment)	1:1	0.80	0.80	0.75*	0.75*	0.75*	0.75*
Rehabilitation of existing impaired wet meadow wetlands.	Restoration (Rehabilitation)	1.5:1	17.30	11.53	16.57	11.05	12.60	8.40
Enhancement of existing emergent wetland upgradient of channel restoration.	Enhancement	3:1	1.74	0.58	1.74	0.58	1.32	0.44
Preservation of existing wetlands within abandoned McGinnis Creek reaches.	Preservation	4:1	0.30	0.08	0.30	0.08	0.30	0.08
Maintain upland buffer averaging 50 feet in length on site perimeter.	Upland Buffer	5:1	2.20	0.44	2.20	0.44	2.20	0.44
Total				**16.33**	**21.01**	**12.34**	**22.84**	**15.78**

*Stream Credit being sought for McGinnis Creek, acreage excluded from total.

this area has been excluded from credit totals. Photographs of the cross-sections in Appendix C illustrate increased vegetation cover along the banks of the restored channel. The total mitigation credits calculated for McGinnis Meadows in 2011 was 15.78, an increase of 3.44 credits from 2010.

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Appendix A

Figures 2, 3, and 4

MDT Wetland Mitigation Monitoring
McGinnis Meadows
Lincoln County, Montana

Figure 2: 2011 Monitoring Activity Locations



LOCATION: Lincoln Co., MT

PROJECT NO: STPX-NH 27(17)

FILE: McGinnis/Monitor2011.mxd

Project Name
McGinnis Meadows Mitigation Site

Drawing Title
2011 Monitoring Activity Locations

DRAWN	CHECKED	APPROVED
BCS	BV	JJ

SCALE: Noted

Drawn: September 26, 2011

PROJ MGR: B Sandefur

CONFLUENCE
consulting incorporated

Figure
2

REV -

GRAPHICAL REPRESENTATION MAY OR MAY NOT DEPICT THE LEGAL DESCRIPTION OF ANY PARCEL HEREIN. THIS FIGURE IS A VISUAL AID ONLY; BOUNDARY RESTORATION MUST BE MADE BY A LICENSED LAND SURVEYOR. THIS FIGURE IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. CONFLUENCE MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

Figure 3: 2011 Mapped Site Features

GRAPHICAL REPRESENTATION MAY OR MAY NOT DEPICT THE LEGAL DESCRIPTION OF ANY PARCEL HEREIN. THIS FIGURE IS A VISUAL AID ONLY; BOUNDARY RESTORATION MUST BE MADE BY A LICENSED LAND SURVEYOR. THIS FIGURE IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. CONFLUENCE MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

Noxious Weeds
Cirsium arvense
Infestation SIze
X = <0.1 acre
▲ = 0.1 to 1 acre
■ = 1 to 5 acre
Cover Class
T = Trace (<1% cover)
L = Low (1-5% cover)
M = Moderate (5-25% cover)
H = High (25-100% cover)

Vegetation Community Types

1 Alopecurus pratensis/Phalaris arundinacea
2 Open Water/Aquatic Macrophytes
4 Picea engelmannii/Alopecurus pratensis
5 Phalaris arundinacea/Alnus incana
6 Carex utriculata
7u Phalaris arundinacea/Alopecurus pratensis (upland)
7w Phalaris arundinacea/Alopecurus pratensis (wetland)
9 Phalaris arundinacea/Carex spp.
11 Alnus incana/Phalaris arundinacea
12 Bare ground soil mounds
13 Deschampsia cespitosa/Glyceria grandis
14 Alopecurus pratensis/Pseudotsuga menziesii

Acreages

Project Area	32.75 acres
Gross Wetlands	21.39 acres
McGinnis Creek (15)	0.75 acres
Net Wetlands	20.64 acres
Uplands	11.36 acres

N
0 125 250 500
Feet

LOCATION: Lincoln Co., MT
PROJECT NO: STPX-NH 27(17)
FILE: McGinnis/Veg2011.mxd

Project Name: McGinnis Meadows Mitigation Site
Drawing Title: 2011 Mapped Site Features

DRAWN BCS | CHECKED BV | APPROVED JU
SCALE: Noted
Drawn: December 12, 2011
PROJ MGR: B Sandefur

CONFLUENCE consulting incorporated

Figure 3

REV -

Figure 4: 2011 Wetland Credit Areas

GRAPHICAL REPRESENTATION MAY OR MAY NOT DEPICT THE LEGAL DESCRIPTION OF ANY PARCEL HEREIN. THIS FIGURE IS A VISUAL AID ONLY; BOUNDARY RESTORATION MUST BE MADE BY A LICENSED LAND SURVEYOR. THIS FIGURE IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. CONFLUENCE MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

Legend

- Monitoring Limits
- 2011 Creation
- 2011 Enhancement
- 2011 Preservation
- 2011 Restoration
- Stream Restoration

AA Acreages

Gross Wetlands	21.39 acres
Restoration	12.60 acres
Enhancement	1.32 acres
Preservation	0.30 acres
Creation	6.42 acres
McGinnis Creek	0.75 acres

N

0 125 250 500

Feet

LOCATION: Lincoln Co., MT

DATE: December 12, 2011

FILE: McGinnis/WetCredit2011.mxd

Project Name
McGinnis Meadows Mitigation Site

Drawing Title
2011 Wetland Credit Areas

DRAWN BCS	CHECKED BV	APPROVED JJ	
SCALE: Noted			
PROJ NO: MDT.004			
PROJ MGR: B Sandefur			

CONFLUENCE
consulting incorporated

Figure 4

REV -

Appendix B

2011 MDT Wetland Mitigation Site Monitoring Form
2011 USACE Wetland Determination Data Form
2011 MDT Montana Wetland Assessment Form

MDT Wetland Mitigation Monitoring
McGinnis Meadows
Lincoln County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: McGinnis Meadows Assessment Date/Time 8/7/2011

Person(s) conducting the assessment: J. Asebrook, J. Hintz

Weather: sunny, warm, mid-80's Location: 7 miles S. of US 2, Lincoln County

MDT District: Missoula Milepost: NA

Legal Description: T 26N R 28W Section(s) 33

Initial Evaluation Date: 7/16/2010 Monitoring Year: 2 #Visits in Year: 1

Size of Evaluation Area: 32.75 (acres)

Land use surrounding wetland:

Hay production and grazing, USFS property (forest)

HYDROLOGY

Surface Water Source: Groundwater and precipitation, flooding events from McGinnis Creek

Inundation: ☑ Average Depth: 1 **(ft)** Range of Depths: 0-3 **(ft)**

Percent of assessment area under inundation: 10 %

Depth at emergent vegetation-open water boundary: 1 **(ft)**

If assessment area is not inundated then are the soils saturated within 12 inches of surface: Yes

Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc**:**

FAC-Neutral, high water table

Groundwater Monitoring Wells

Record depth of water surface below ground surface, in feet.

Well ID	Water Surface Depth (ft)
MW-1	0.67
MW-2	2.42
MW-3	2.75

Additional Activities Checklist:

☑ Map emergent vegetation-open water boundary on aerial photograph.

☑ Observe extent of surface water during each site visit and look for evidence of past surface water elevations (drift lines, erosion, vegetation staining, etc.)

☑ Use GPS to survey groundwater monitoring well locations, if present.

Hydrology Notes:

VEGETATION COMMUNITIES

Site McGinnis Meadows

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

* Indicates accepted spp name not on '88 list.

Community # 1 **Community Type:** Alopecurus pratensis / Phalaris arundinacea **Acres:** 5.03

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agropyron repens	0
Agrostis stolonifera	0	Alopecurus pratensis	5
Campanula rotundifolia	0	Cardamine pensylvanica	0
Carex athrostachya	0	Carex bebbii	0
Carex nebrascensis	0	Carex pachystachya	1
Carex stipata	0	Carex utriculata*	0
Cirsium arvense	1	Cirsium vulgare	0
Cynoglossum officinale	0	Epilobium ciliatum	0
Equisetum arvense	0	Erysimum cheiranthoides	0
Fragaria virginiana	0	Galium trifidum	0
Geum macrophyllum	0	Hordeum brachyantherum	0
Juncus confusus	0	Mentha arvensis	0
Mimulus guttatus	0	Phalaris arundinacea	2
Phleum pratense	0	Pinus contorta	0
Plantago major	0	Poa palustris	1
Poa pratensis	1	Polygonum amphibium	0
Polygonum douglasii	0	Populus tremuloides*	0
Potentilla gracilis	0	Potentilla norvegica	0
Prunella vulgaris	0	Rumex crispus	0
Scirpus microcarpus	0	Senecio hydrophilus	0
Stellaria longifolia	0	Symphyotrichum laeve	0
Tanacetum vulgare	0	Taraxacum officinale	0
Thlaspi arvense	0	Trifolium hybridum	0
Urtica dioica	0	Verbascum thapsus	0
Veronica americana	0	Veronica serpyllifolia	0
Viola adunca	0		

Comments:

Community # 2 **Community Type:** Open Water / Aquatic Macrophytes **Acres:** 2.7

Species	Cover class	Species	Cover class
Algae, green	1	Alopecurus aequalis	0
Cardamine pensylvanica	0	Carex nebrascensis	0
Carex praticola	0	Carex sp.	1
Carex stipata	0	Carex utriculata*	0
Cicuta douglasii	0	Cirsium arvense	0
Eleocharis palustris	0	Epilobium palustre	0
Equisetum sp.	0	Galium trifidum	0
Galium triflorum	0	Geum macrophyllum	0
Glyceria borealis	0	Glyceria grandis	2
Juncus articulatus	0	Juncus confusus	0
Juncus ensifolius	0	Juncus nevadensis	0
Mentha arvensis	0	Mimulus guttatus	0
Myriophyllum sp	0	Open water	4
Phalaris arundinacea	2	Poa palustris	0
Poa pratensis	0	Polygonum amphibium	0
Potentilla norvegica	0	Potentilla palustris	0
Rorippa palustris	0	Rumex crispus	0
Scirpus microcarpus	0	Typha latifolia	0
Veronica americana	0	Veronica scutellata	0
Viola sp.	0		

Comments:

Community # 4 **Community Type:** Picea engelmannii / Alopecurus pratensis **Acres:** 0.59

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agropyron repens	1
Agrostis stolonifera	1	Alopecurus pratensis	5
Arctostaphylos uva-ursi	0	Bromus carinatus	0
Campanula rotundifolia	0	Carex pachystachya	0
Centaurea maculosa	0	Cirsium arvense	5
Cirsium vulgare	0	Cynoglossum officinale	0
Elymus glaucus	0	Elymus trachycaulus	1
Equisetum arvense	0	Erysimum cheiranthoides	0
Fragaria virginiana	0	Mahonia repens	0
Maianthemum stellatum	0	Medicago lupulina	0
Penstemon confertus	1	Phalaris arundinacea	3
Phleum pratense	0	Picea engelmannii	4
Pinus contorta	1	Pinus ponderosa	1
Poa pratensis	1	Populus tremuloides*	1
Potentilla gracilis	0	Rosa woodsii	0
Rumex crispus	0	Senecio hydrophilus	0
Silene menziesii	0	Symphoricarpos albus	1
Symphyotrichum laeve	0	Taraxacum officinale	0
Tragopogon dubius	0	Trifolia aureum	0
Trifolium hybridum	0	Urtica dioica	0
Verbascum thapsus	0	Viola adunca	0

Comments:

Community # 5 **Community Type:** Phalaris arundinacea / Alnus incana **Acres:** 1.9

Species	Cover class	Species	Cover class
Alnus incana	4	Alopecurus pratensis	1
Cirsium arvense	0	Crataegus douglasii	2
Erysimum cheiranthoides	0	Heracleum sphondylium	1
Mentha arvensis	0	Phalaris arundinacea	4
Senecio hydrophilus	1	Taraxacum officinale	0
Urtica dioica	0		

Comments:

Community # 6 **Community Type:** Carex utriculata* / **Acres:** 0.17

Species	Cover class	Species	Cover class
Alopecurus pratensis	0	Carex utriculata*	5
Phalaris arundinacea	2	Poa palustris	0

Comments:

Community # 7 Community Type: Phalaris arundinacea / Alopecurus pratensis **Acres:** 11.47

Species	Cover class	Species	Cover class
Agropyron repens	0	Agrostis stolonifera	0
Alnus sinuata	0	Alopecurus pratensis	3
Bromus carinatus	0	Bromus inermis	0
Capsella bursa-pastoris	0	Cardamine pensylvanica	0
Carex athrostachya	0	Carex bebbii	0
Carex microptera	0	Carex nebrascensis	0
Carex pachystachya	0	Carex praticola	0
Carex stipata	0	Cirsium arvense	1
Cirsium vulgare	0	Cynoglossum officinale	0
Dactylis glomerata	0	Elymus glaucus	0
Epilobium ciliatum	0	Erysimum cheiranthoides	0
Galium trifidum	0	Geum macrophyllum	0
Glyceria grandis	0	Glyceria striata	0
Gnaphalium palustre	0	Heracleum sphondylium	0
Hordeum brachyantherum	0	Juncus confusus	0
Juncus ensifolius	0	Mentha arvensis	0
Mimulus guttatus	0	Phalaris arundinacea	5
Phleum pratense	0	Poa palustris	1
Poa pratensis	1	Polygonum douglasii	0
Potentilla norvegica	0	Rorippa palustris	0
Rumex crispus	0	Scirpus microcarpus	0
Scutellaria galericulata	0	Senecio hydrophilus	0
Sisymbrium altissimum	0	Taraxacum officinale	0
Thlaspi arvense	0	Trifolium hybridum	0
Trifolium repens	0	Urtica dioica	0
Verbascum thapsus	0	Veronica americana	0

Comments:

Some portions of this community identified as upland and the remaining as wetland.

Community # 9 Community Type: Phalaris arundinacea / Carex spp. **Acres:** 4.95

Species	Cover class	Species	Cover class
Alopecurus pratensis	1	Carex aquatilis	1
Carex bebbii	0	Carex utriculata*	0
Cirsium arvense	0	Eleocharis palustris	0
Geum macrophyllum	0	Mentha arvensis	0
Phalaris arundinacea	5	Poa palustris	1
Poa pratensis	0	Potentilla anserina	0
Potentilla palustris	0	Veronica scutellata	0

Comments:

Community # 11 **Community Type:** Alnus incana / Phalaris arundincea **Acres:** 0.53

Species	Cover class	Species	Cover class
Agropyron repens	0	Agrostis stolonifera	1
Algae, green	0	Alnus incana	3
Alopecurus pratensis	1	Arnica chamissonis	0
Calamagrostis canadensis	0	Carex bebbii	0
Carex stipata	0	Carex utriculata*	0
Cerastium fontanum	0	Ceratophyllum demersum	0
Cicuta douglasii	0	Cirsium arvense	3
Convolvulus arvensis	0	Deschampsia cespitosa	0
Epilobium ciliatum	0	Epilobium ciliatum	0
Equisetum sp.	0	Erysimum cheiranthoides	0
Galium trifidum	0	Geum macrophyllum	0
Glyceria borealis	1	Juncus confusus	0
Juncus ensifolius	0	Mentha arvensis	0
Mimulus guttatus	0	Phalaris arundinacea	5
Potentilla norvegica	0	Rubus idaeus	0
Rumex crispus	0	Rumex crispus	0
Scirpus microcarpus	0	Scutellaria galericulata	0
Symphyotrichum lanceolatu	0	Verbascum thapsus	0
Veronica americana	0	Viola sp.	0

Comments:

Community # 12 **Community Type:** Bare ground soil mounds / **Acres:** 0.28

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Alopecurus pratensis	1
Bare ground	5	Bromus carinatus	0
Cirsium arvense	1	Elymus glaucus	0
Hordeum brachyantherum	0	Phalaris arundinacea	0
Verbascum thapsus	0		

Comments:

Community # 13 **Community Type:** Deschampsia cespitosa / Glyceria grandis **Acres:** 3.5

Species	Cover class	Species	Cover class
Agropyron repens	0	Agrostis interrupta	0
Agrostis scabra	0	Agrostis stolonifera	0
Alnus incana	0	Alopecurus aequalis	0
Alopecurus pratensis	0	Bare ground	4
Beckmannia syzigachne	0	Calamagrostis canadensis	0
Cardamine pensylvanica	1	Carex athrostachya	0
Carex bebbii	1	Carex nebrascensis	0
Carex pachystachya	0	Carex praticola	0
Carex stipata	0	Carex utriculata*	0
Cerastium fontanum	0	Cicuta douglasii	0
Cirsium arvense	2	Cirsium vulgare	0
Deschampsia cespitosa	3	Eleocharis palustris	0
Epilobium ciliatum	0	Equisetum arvense	0
Equisetum sp.	0	Erysimum cheiranthoides	0
Galium trifidum	0	Geum macrophyllum	0
Glyceria borealis	0	Glyceria grandis	3
Gnaphalium palustre	0	Juncus articulatus	0
Juncus bufonius	0	Juncus confusus	2
Juncus effusus	0	Juncus ensifolius	0
Juncus longistylis	0	Juncus tenuis	0
Mentha arvensis	0	Mimulus guttatus	0
Phalaris arundinacea	1	Phleum pratense	0
Plantago major	0	Poa palustris	1
Poa pratensis	0	Polygonum amphibium	0
Polygonum douglasii	0	Potentilla norvegica	1
Prunella vulgaris	0	Rorippa palustris	0
Rumex crispus	0	Salix spp.	0
Scirpus microcarpus	0	Stellaria longifolia	0
Symphyotrichum lanceolatu	0	Taraxacum officinale	0
Triglochin maritimum	0	Typha latifolia	0
Verbascum thapsus	0	Veronica americana	1
Veronica peregrina	0	Veronica scutellata	0
Veronica serpyllifolia	0	Viola sp.	0

Comments:

Community # 14 **Community Type:** Alopecurus pratensis / Pseudotsuga menziesii **Acres:** 0.9

Species	Cover class	Species	Cover class
Abies lasiocarpa	0	Achillea millefolium	0
Agrostis stolonifera	0	Alnus incana	1
Alopecurus pratensis	5	Calamagrostis rubescens	0
Cirsium vulgare	0	Fragaria virginiana	0
Larix occidentalis	2	Mahonia repens	1
Maianthemum stellatum	0	Phalaris arundinacea	1
Pinus contorta	2	Poa pratensis	1
Poa pratensis	1	Pseudotsuga menziesii	4
Senecio hydrophilus	0	Silene menziesii	1
Symphoricarpos albus	1	Vaccinium cespitosum	1

Comments:

Total Vegetation Community Acreage **32.02**

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

VEGETATION TRANSECTS

Site: McGinnis Meadows Date: 8/7/2011

Transect Number: 1 **Compass Direction from Start:** 318

Interval Data:

Ending Station 30 **Community Type:** Alopecurus pratensis / Phalaris arundinacea

Species	Cover class	Species	Cover class
Alopecurus pratensis	5	Cirsium arvense	1
Phalaris arundinacea	3	Poa pratensis	1
Polygonum amphibium	0	Populus tremuloides*	0
Senecio hydrophilus	1	Urtica dioica	0

Ending Station 45 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Alopecurus pratensis	0	Bare ground	4
Cardamine pensylvanica	0	Carex bebbii	0
Cirsium arvense	3	Deschampsia cespitosa	2
Epilobium ciliatum	0	Erysimum cheiranthoides	0
Glyceria borealis	0	Gnaphalium palustre	0
Juncus confusus	0	Mentha arvensis	0
Mimulus guttatus	0	Poa pratensis	0
Potentilla norvegica	0	Veronica americana	1

Ending Station 309 **Community Type:** Open water / Aquatic Macrophytes

Species	Cover class	Species	Cover class
Cardamine pensylvanica	0	Carex praticola	1
Eleocharis palustris	0	Glyceria grandis	1
Juncus confusus	0	Open water	5
Polygonum amphibium	0	Potentilla palustris	0
Scirpus microcarpus	0	Veronica americana	0

Ending Station 314 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Alopecurus pratensis	1	Bare ground	4
Cardamine pensylvanica	0	Carex sp.	1
Cirsium arvense	0	Cirsium vulgare	0
Deschampsia cespitosa	1	Glyceria grandis	1
Juncus tenuis	1	Mentha arvensis	0
Polygonum amphibium	0	Rorippa palustris	0
Scirpus microcarpus	1	Veronica americana	0
Veronica peregrina	0		

Ending Station 369 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Alnus sinuata	1	Alopecurus pratensis	1
Bromus inermis	0	Carex bebbii	0
Cirsium arvense	5	Cirsium vulgare	0
Cynoglossum officinale	0	Geum macrophyllum	0
Hordeum brachyantherum	0	Phalaris arundinacea	4
Poa pratensis	1	Scirpus microcarpus	0
Verbascum thapsus	0	Veronica americana	0

Ending Station 470 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Alnus incana	1
Alopecurus pratensis	2	Bare ground	4
Cardamine pensylvanica	1	Carex athrostachya	2
Carex stipata	0	Carex utriculata*	0
Cerastium fontanum	0	Cicuta douglasii	0
Cirsium arvense	2	Deschampsia cespitosa	1
Eleocharis palustris	0	Epilobium ciliatum	0
Equisetum sp.	0	Erysimum cheiranthoides	0
Geum macrophyllum	0	Glyceria grandis	1
Gnaphalium palustre	0	Juncus bufonius	1
Juncus confusus	1	Mentha arvensis	0
Phalaris arundinacea	0	Phleum pratense	0
Plantago major	0	Poa palustris	0
Poa pratensis	0	Polygonum amphibium	0
Potentilla norvegica	0	Prunella vulgaris	0
Rumex crispus	0	Salix sp.	0
Scirpus microcarpus	0	Symphyotrichum lanceolatu	0
Taraxacum officinale	0	Verbascum thapsus	0
Veronica americana	0	Veronica peregrina	0
Veronica serpyllifolia	0	Viola sp.	0

Ending Station 493 **Community Type:** Open water / Aquatic Macrophytes

Species	Cover class	Species	Cover class
Cardamine pensylvanica	0	Carex praticola	3
Cirsium arvense	0	Eleocharis palustris	1
Galium triflorum	0	Geum macrophyllum	0
Glyceria grandis	0	Juncus articulatus	0
Juncus confusus	0	Mentha arvensis	0
Open water	4	Phalaris arundinacea	0
Poa palustris	1	Scirpus microcarpus	1

Ending Station 504 **Community Type:** Alopecurus pratensis / Phalaris arundinacea

Species	Cover class	Species	Cover class
Alopecurus pratensis	3	Cardamine pensylvanica	2
Carex athrostachya	1	Cirsium arvense	1
Equisetum sp.	1	Geum macrophyllum	1
Juncus confusus	0	Mentha arvensis	0
Phalaris arundinacea	1	Plantago major	0
Poa palustris	1	Polygonum douglasii	0
Rumex crispus	0	Scirpus microcarpus	3
Veronica americana	1		

Transect Notes:

Starts at Pinus contorta tree. Areas between 369-470' had open water; majority is mudflat. Also open water between 481-488 ft.

Transect Number: 2 **Compass Direction from Start:** 330

Interval Data:

Ending Station 78 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Agropyron repens	2	Alopecurus pratensis	4
Cardamine pensylvanica	0	Phalaris arundinacea	5
Poa pratensis	0	Potentilla norvegica	0
Taraxacum officinale	0		

Ending Station 216 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Alopecurus aequalis	0
Beckmannia syzigachne	0	Calamagrostis canadensis	0
Cardamine pensylvanica	0	Carex athrostachya	0
Carex bebbii	0	Carex nebrascensis	1
Cerastium fontanum	0	Cirsium arvense	0
Deschampsia cespitosa	1	Eleocharis palustris	2
Epilobium ciliatum	0	Glyceria grandis	4
Gnaphalium palustre	0	Juncus confusus	0
Juncus effusus	0	Juncus ensifolius	0
Juncus longistylis	0	Phalaris arundinacea	1
Poa palustris	0	Poa pratensis	0
Potentilla norvegica	0	Triglochin maritimum	0
Typha latifolia	0	Veronica americana	0

Ending Station 234 **Community Type:** Open water / Aquatic Macrophytes

Species	Cover class	Species	Cover class
Algae, green	1	Cardamine pensylvanica	0
Carex praticola	2	Glyceria grandis	2
Myriophyllum sp	0	Open water	5
Phalaris arundinacea	4	Veronica scutellata	1

Ending Station 316 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Alopecurus pratensis	1	Carex athrostachya	1
Carex bebbii	0	Carex nebrascensis	1
Carex praticola	0	Cirsium arvense	0
Erysimum cheiranthoides	1	Glyceria grandis	1
Juncus confusus	2	Phalaris arundinacea	4
Poa palustris	1	Potentilla norvegica	0
Rumex crispus	0	Veronica americana	1

Ending Station 322 **Community Type:** Open water / McGinnis Creek

Species	Cover class	Species	Cover class
Cardamine pensylvanica	0	Cirsium arvense	0
Galium trifidum	1	Mentha arvensis	0
Open water	5	Phalaris arundinacea	1
Poa palustris	1	Potentilla norvegica	0
Rorippa palustris	0	Viola sp.	0

Ending Station 394 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Galium trifidum	0
Phalaris arundinacea	5	Potentilla norvegica	0
Veronica americana	0		

Ending Station 398 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Carex praticola	1	Galium trifidum	0
Glyceria grandis	3	Juncus articulatus	0
Juncus confusus	1	Phalaris arundinacea	5
Poa palustris	1	Potentilla norvegica	0
Veronica americana	1		

Ending Station 415 **Community Type:** Open water / Aquatic Macrophytes

Species	Cover class	Species	Cover class
Alopecurus aequalis	0	Cardamine pensylvanica	0
Carex praticola	0	Eleocharis palustris	1
Galium trifidum	0	Glyceria grandis	2
Juncus confusus	0	Juncus ensifolius	0
Open water	4	Phalaris arundinacea	1
Poa pratensis	1	Scirpus microcarpus	1
Typha latifolia	0		

Ending Station 420 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Carex bebbii	0	Carex nebrascensis	1
Glyceria grandis	2	Juncus ensifolius	0
Juncus longistylis	0	Phalaris arundinacea	2
Poa palustris	0	Poa pratensis	0
Scirpus microcarpus	2		

Ending Station 446 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Cardamine pensylvanica	0	Geum macrophyllum	0
Phalaris arundinacea	5	Poa palustris	0
Potentilla norvegica	0		

Ending Station 451 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Bare ground	1	Cardamine pensylvanica	0
Carex athrostachya	0	Carex bebbii	0
Carex nebrascensis	0	Geum macrophyllum	0
Glyceria grandis	5	Juncus articulatus	0
Juncus confusus	1	Juncus ensifolius	0
Phalaris arundinacea	2		

Ending Station 468 **Community Type:** Open water / Aquatic Macrophytes

Species	Cover class	Species	Cover class
Cardamine pensylvanica	0	Glyceria grandis	2
Open water	5	Phalaris arundinacea	2

Ending Station 478 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Cardamine pensylvanica	0	Eleocharis palustris	0
Glyceria grandis	4	Juncus confusus	0
Phalaris arundinacea	2	Poa palustris	0
Scirpus microcarpus	0	Veronica americana	0

Ending Station 516 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Phalaris arundinacea	5		

Ending Station 522 **Community Type:** Open water / McGinnis Creek

Species	Cover class	Species	Cover class
Cicuta douglasii	0	Galium trifidum	0
Open water	5	Phalaris arundinacea	1
Veronica americana	0		

Ending Station 623 **Community Type:** Phalaris arundinacea / Alopecurus pratensis

Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Bare ground	0
Cardamine pensylvanica	0	Carex stipata	0
Epilobium ciliatum	0	Erysimum cheiranthoides	0
Galium trifidum	1	Glyceria striata	0
Phalaris arundinacea	5	Poa palustris	0
Potentilla norvegica	0	Veronica americana	0

Ending Station 730 **Community Type:** Open water / Aquatic Macrophytes

Species	Cover class	Species	Cover class
Carex praticola	1	Glyceria grandis	2
Glyceria striata	0	Open water	4
Phalaris arundinacea	1	Typha latifolia	0
Veronica scutellata	0		

Ending Station 736 **Community Type:** Deschampsia cespitosa / Glyceria grandis

Species	Cover class	Species	Cover class
Alopecurus pratensis	0	Bare ground	4
Cardamine pensylvanica	0	Deschampsia cespitosa	0
Eleocharis palustris	1	Glyceria grandis	2
Juncus tenuis	0	Phalaris arundinacea	2

Ending Station 1000 **Community Type:** Phalaris arundinacea / Carex spp.

Species	Cover class	Species	Cover class
Alopecurus pratensis	0	Carex aquatilis	0
Carex utriculata*	2	Geum macrophyllum	0
Phalaris arundinacea	5	Poa palustris	0

Transect Notes:

16 degree declination on compass.

PLANTED WOODY VEGETATION SURVIVAL

McGinnis Meadows

Planting Type	#Planted	#Alive	Notes
Alnus sp.		8	
Cornus sericea		3	
Populus tremuloides		10	
Salix sp.		5	

Comments

Planted woody success difficult to assess due to robust vegetation cover throughout the entire site.

McGinnis Meadows

WILDLIFE

Birds

Were man-made nesting structures installed? No

If yes, type of structure: _____

How many? _____

Are the nesting structures being used? No

Do the nesting structures need repairs? No

Nesting Structure Comments:

Species	#Observed	Behavior	Habitat
Bank Swallow	25	FO	
Canada Goose	2	L	OW, WM
common sandpiper	1	FO	
Gadwall	4	F	OW
Mallard	1	F	OW
Wilson's Snipe	1	FO	

Bird Comments

Goose scat observed around open water areas.

BEHAVIOR CODES

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

HABITAT CODES

AB = Aquatic bed **SS** = Scrub/Shrub **FO** = Forested **UP** = Upland buffer **I** = Island

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

Mammals and Herptiles

Species	# Observed	Tracks	Scat	Burrows	Comments
Columbia Spotted Frog	35	No	No	No	
Deer	4	Yes	No	No	Abundant tracks, 4 individuals observed
Moose	1	Yes	No	No	
White-tailed Deer	3	No	No	No	Many deer beds also observed

Wildlife Comments:

McGinnis Meadows

PHOTOGRAPHS

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

Photograph Checklist:

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

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

☐ At least one photograph showing the buffer surrounding the wetland.

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

Photo #	Latitude	Longitude	Bearing	Description
609				Wetland delineation plot M-1W
610				Wetland delineation plot M-1U
613			250	PP1 - photo 1
614			330	Veg. transect 1 start
616-619			335	PP3 - panorama
620			85	PP2
622			110	PP2
623			140	PP2
624			180	PP2
626-631			15	PP4 - panorama
632				Wetland delineation plot M-4U
633				Wetland delineation plot M-4W
634			150	Veg. transect 1 - end
635			0	Veg. transect 2 - start
636-640			90	Stream XS-3 downstream
641; 643			270	Stream XS-3 upstream
645				Wetland delineation plot M-5W
646			180	Veg. transect 2 - end
647-653			130	PP5 - panorama
654				Wetland delineation plot M-6U
655-659			210	PP7 - panorama
660-663			70	Stream XS-2 upstream
664-666			350	Stream XS-2 downstream
668			270	PP1
669			300	PP1

671	275	Stream XS-1 downstream
673	290	Stream XS-1 Downstream
674-676	110	Stream XS-1 upstream
677-679	220	PP6 - panorama PP6 - panorama PP6 - panorama

Comments:

McGinnis Meadows

ADDITIONAL ITEMS CHECKLIST

Hydrology

☐ Map emergent vegetation/open water boundary on aerial photos.
☐ Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift lines, vegetation staining, erosion, etc).

Photos

☐ One photo from the wetland toward each of the four cardinal directions
☐ One photo showing upland use surrounding the wetland.
☐ One photo showing the buffer around the wetland
☐ One photo from each end of each vegetation transect, toward the transect

Vegetation

☑ Map vegetation community boundaries

☑ Complete Vegetation Transects

Soils

☑ Assess soils

Wetland Delineations

☑ Delineate wetlands according to applicable USACE protocol (1987 form or Supplement)
☑ Delineate wetland – upland boundary onto aerial photograph.

Wetland Delineation Comments

Functional Assessments

☑ Complete and attach full MDT Montana Wetland Assessment Method field forms.

Functional Assessment Comments:

Maintenance

Were man-made nesting structure installed at this site? No

If yes, do they need to be repaired?

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

Were man-made structures built or installed to impound water or control water flow into or out of the wetland? No

If yes, are the structures in need of repair?

If yes, describe the problems below.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-1U

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.96462174 | Long: -115.21674388 | Datum: NAD83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☑ No ☐	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Alopecurus pratensis	95	☑	FACW
2. Poa palustris	2	☐	FAC
3. Poa pratensis	2	☐	FAC
4. Carex bebbii	2	☐	OBL
5. Cirsium arvense	1	☐	FACU+
6. Verbascum thapsus	1	☐	NL
7. Achillea millefolium	1	☐	FACU
8. Senecio hydrophilus	1	☐	OBL
9.	0	☐	
10.	0	☐	
11.	0	☐	
	105 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	
FACW species	95	x 2 =	190
FAC species	4	x 3 =	12
FACU species	2	x 4 =	8
UPL species	1	x 5 =	
Column Totals:	105 (A)		218 (B)

Prevalence Index = B/A = 2.08

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
Passes dominance test (100%, which is > 50%).

SOIL

Sampling Point: M-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Silty Clay Loam	
2-12	10YR 2/1	60	10YR 4/4	40	C	M	Silty Clay Loam	Mottles are sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

High organic content with large sandy mottles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No evidence of wetland hydrology

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-1W

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): Flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.96460782 | Long: -115.21674304 | Datum: NAD 83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐
Hydric Soil Present?	Yes ☑ No ☐	
Wetland Hydrology Present?	Yes ☑ No ☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	40	☑	FACW
2. Alopecurus pratensis	30	☑	FACW
3. Hordeum brachyantherum	15	☐	FACW
4. Poa pratensis	10	☐	FAC
5. Carex nebrascensis	3	☐	OBL
6. Cirsium arvense	1	☐	FACU+
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
	99 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	
FACW species	85	x 2 =	170
FAC species	10	x 3 =	30
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	99 (A)		207 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
Passes dominance test (100%), prevalence test (2.09) and FAC-Neutral test (4:1).

SOIL

Sampling Point: M-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	97	10YR 4/4	3	C	M	Silty Loam	High organic content

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 10

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soil is saturated within 12" of surface.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows City/County: Lincoln Sampling Date: 8/7/2011

Applicant/Owner: MDT State: MT Sampling Point: M-2U

Investigator(s): J. Asebrook, J. Hintz Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland Local relief (concave, convex, none): Flat Slope (%): 0

Subregion (LRR): LRR E Lat: 47.963712 Long: -115.218492 Datum: NAD83

Soil Map Unit Name: Fluvents, flood plains NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Alopecurus pratensis	80	☑	FACW
2. Phalaris arundinacea	20	☐	FACW
3. Cirsium arvense	5	☐	FACU+
4. Verbascum thapsus	1	☐	NL
5. Rumex crispus	1	☐	FACW
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
	107 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	101	x 2 =	202
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	1	x 5 =	5
Column Totals:	107 (A)		227 (B)

Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
Passes dominance test (100%, which is > 50%).

SOIL

Sampling Point: M-2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Does not meet criteria for wetland soil; not depleted matrix, and not organic.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No evidence of wetland hydrology

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-3W

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): Flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.964713 | Long: -115.219538 | Datum: NAD 83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐
Hydric Soil Present?	Yes ☑ No ☐	
Wetland Hydrology Present?	Yes ☑ No ☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. Crataegus douglasii	10	☑	FAC
2. Alnus incana	10	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
	20 = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	90	☑	FACW
2. Heracleum sphondylium	10	☐	NI
3. Mentha arvensis	1	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
	101 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	100	x 2 =	200
FAC species	11	x 3 =	33
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	121 (A)		283 (B)

Prevalence Index = B/A = 2.34

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
Passes dominance test (100%). Prev Index<3.0.

SOIL

Sampling Point: M-3W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					Silty Clay Loam	
7-14	10YR 2/1	95	10YR 4/2	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Assume layer below dark surface (10YR 2/1) depleted based on presence of depletions between 7 and 14 inches of the excavated profile. Soils mapped by NRCS as hydric. Area met wetland criteria in 2010.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☑ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hummocks present throughout community, vegetation passes FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-4U

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): Flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.96493 | Long: -115.218481 | Datum: NAD 83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Alopecurus pratensis	90	☑	FACW
2. Phalaris arundinacea	10	☐	FACW
3. Poa palustris	2	☐	FAC
4. Cirsium arvense	1	☐	FACU+
5. Carex athrostachya	1	☐	FACW
6. Carex bebbii	1	☐	OBL
7. Rumex crispus	1	☐	FACW
8. Erysimum cheiranthoides	1	☐	FACU
9.	0	☐	
10.	0	☐	
11.	0	☐	
	107 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	
FACW species	102	x 2 =	204
FAC species	2	x 3 =	6
FACU species	2	x 4 =	8
UPL species	0	x 5 =	
Column Totals:	107 (A)		219 (B)

Prevalence Index = B/A = 2.89

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
Passes dominance test (100%). Passes FAC-Neutral test (5:2).

SOIL

Sampling Point: M4U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Silty Clay Loam	Slightly organic
6-12	10YR 2/1	95	10YR 4/2	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Does not qualify as hydric soil: not organic, and matrix is not depleted.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-4W

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.96492927 | Long: -115.21844021 | Datum: NAD 83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐
Hydric Soil Present?	Yes ☑ No ☐	
Wetland Hydrology Present?	Yes ☑ No ☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Glyceria grandis	20	☑	OBL
2. Alopecurus pratensis	10	☑	OBL
3. Deschampsia cespitosa	3	☐	FACW
4. Poa palustris	3	☐	FAC
5. Agropyron repens	2	☐	FACU
6. Juncus confusus	1	☐	FAC
7. Cirsium arvense	1	☐	FACU+
8. Carex athrostachya	1	☐	FACW
9. Erysimum cheiranthoides	1	☐	FACU
10. Veronica scutellata	1	☐	OBL
11. Carex bebbii	1	☐	OBL
	44 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	1	☐	
2.	0	☐	
	1 = Total Cover		

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	22	x 1 =	
FACW species	14	x 2 =	28
FAC species	4	x 3 =	12
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	44 (A)		78 (B)

Prevalence Index = B/A = 1.77

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

Passes dominance test (100%) and prevalence test (1.77). Does not pass FAC-Neutral test (6:3).

SOIL

Sampling Point: M-4W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Silty Clay	
6-9	10YR 5/2	100					Silty Clay	
9-16	10YR 2/2	95	10YR 4/6	5	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Meets hydric soil requirements with water table within 12" below the surface, and saturation within upper 12" (at surface).

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-5W

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.967108 | Long: -115.219603 | Datum: NAD 83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐
Hydric Soil Present?	Yes ☑ No ☐	
Wetland Hydrology Present?	Yes ☑ No ☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	95	☑	FACW
2. Alopecurus pratensis	5	☐	FACW
3. Poa palustris	2	☐	FAC
4. Carex aquatilis	2	☐	OBL
5. Galium trifidum	1	☐	FACW+
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
	105 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	
FACW species	101	x 2 =	202
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		210 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

Passes dominance test (100%) and prevalence test (2.0). Passes FAC-Neutral test (4:0).

SOIL

Sampling Point: M-5W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	95	10YR 4/4	5	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Meets hydric soil criteria with saturation and water table within the upper 12" of soil; saturation at surface and water table at 9".

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McGinnis Meadows | City/County: Lincoln | Sampling Date: 8/7/2011

Applicant/Owner: MDT | State: MT | Sampling Point: M-6U

Investigator(s): J. Asebrook, J. Hintz | Section, Township, Range: S 33 T 26N R 28W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 47.96662392 | Long: -115.21849394 | Datum: NAD 83

Soil Map Unit Name: Fluvents, flood plains | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. Poa pratensis	90	☑	FACU+
2. Alopecurus pratensis	20	☐	FACW
3. Carex stipata	1	☐	OBL
4. Carex bebbii	1	☐	OBL
5. Carex pachystachya	1	☐	FAC
6. Polygonum amphibium	1	☐	OBL
7. Rumex crispus	1	☐	FACW
8. Agrostis stolonifera	1	☐	FAC+
9.	0	☐	
10.	0	☐	
11.	0	☐	
	116 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	
FACW species	21	x 2 =	42
FAC species	2	x 3 =	6
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	116 (A)		(B)

Prevalence Index = B/A = 3.54

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
Does not pass dominance test or prevalence test.

SOIL

Sampling Point: M-6U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100					Sandy Loam	
6-16	10YR 2/1	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks:
Not hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No field evidence of wetland hydrology. Veg com passes FAC-Neutral test to provided data point with one secondary indicator.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name McGinnis Meadows **2. MDT project#** NH 27(17) **Control#**

3. Evaluation Date 8/7/2011 **4. Evaluators** J. Asebrook, J. Hintz **5. Wetland/Site# (s)** Creation

6. Wetland Location(s): T 26N **R** 28W **Sec1** 33 **T** **R** **Sec2**

Approx Stationing or Mileposts NA

Watershed 17010102 **Watershed/County** Kootenai River Watershed/Lincoln County

7. Evaluating Agency Confluence for MDT

8. Wetland size acres 6.42

Purpose of Evaluation

How assessed: Measured e.g. by GPS

☐ **Wetlands potentially affected by MDT project**

9. Assesssment area (AA) size (acres) 6.42

☐ **Mitigation Wetlands: pre-construction**

How assessed: Measured e.g. by GPS

☑ **Mitigation Wetlands: post construction**

☐ **Other**

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Depressional	Aquatic Bed	Excavated	Permanent/Perennial	60
Depressional	Emergent Wetland	Excavated	Seasonal/Intermittant	40

11. Estimated Relative Abundance Common

12. General Condition of AA

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) 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%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=30%.	moderate	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >=30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc)

AA includes several depression areas that were excavated within uplands. Many of these depressions were ponded in 2011 with 0.2 to1 foot of standing water. The edges were dominated by emegent vegetation in mudflat areas. These edges are seasonally ponded.

ii. Prominent noxious, aquatic nuisance, other exotic species:

Cirsium arvense relatively common around the edges of ponds.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat

AA includes several depressions created within uplands in 2009. Surrounding land use includes low density residential, moderate road density, and forested habitat.

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 preventing (passive) existence of additional vegetated classes?		Modified Rating
>=3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	M	<NO	YES>	**L**
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

Comments:

SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

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

Primary or critical habitat (list species)	◉ D ◉ S	
Secondary habitat (list Species)	◉ D ◉ S	
Incidental habitat (list species)	◉ D ○ S	grizzly bear, Canada lynx
No usable habitat	▣ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8H	.7M	.3L	.1L	0L

Sources for documented use USFWS, observation of grizzly bear by adjacent landowner.

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

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

Primary or critical habitat (list species)	◉ D ◉ S	
Secondary habitat (list Species)	○ D ○ S	
Incidental habitat (list species)	○ D ◉ S	Pileated woodpecker (S3)
No usable habitat	▣ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use MNHP listed for Lincoln County

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence):

Moderate

Substantial (based on any of the following [check]):

- ☐ observations of abundant wildlife #s or high species diversity (during any period)
- ☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ presence of extremely limiting habitat features not available in the surrounding area
- ☐ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ☐ few or no wildlife observations during peak use periods
- ☐ little to no wildlife sign
- ☐ sparse adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ☑ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ adequate adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

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

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Low
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments AA connected to wilderness habitat.

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

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

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 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?* **Y** ◯ **N** ◉ *If yes, reduce score in* ***i*** *above by 0.1:* **Modified Rating**

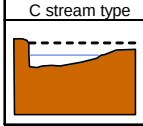
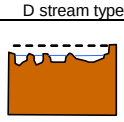
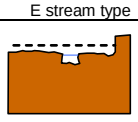
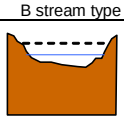
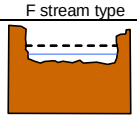
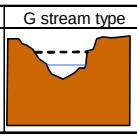
b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ◯ **Y** ◉ **N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*
Modifed Rating

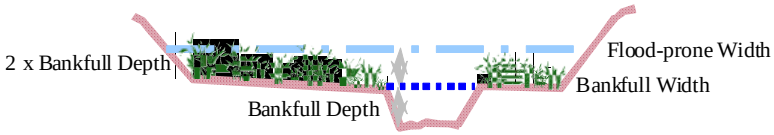
iii. Final Score and Rating: 0 NA **Comments:**

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Slightly Entrenched ER = >2.2			**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
						



Floodrpone width 18 **/** **Bankfull width** 6 **=** **Entrenchment ratio** 3

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 (check)? **Y** ◯ **N** ◉

Comments: Excavated depression hydrologically connected to periodic overbank flooding along McGinnis Creek.

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

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

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Depressions located along floodplain of McGinnis Creek, assumes 6.19 acres flooded to a minimal depth of one foot.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands 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, click ☐ **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% 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**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments:

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or 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, click ☐ **NA** here and proceed to 14I.)

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

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments: Assumes perennial open water areas subject to wave action.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [check])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	H	M	L

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

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component <1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9	.6M	.7H	.4	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8	.5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? **Y** ◉ **N** ○ *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* **Modified Rating** .8H

Comments: AA closed depression with no outlet, appear to be perennially saturated.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

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: Wetland intercepts groundwater table

ii. Recharge Indicators

- ☐ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge volume decreases
- ☐ Other:

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

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information		NA		

Comments:

14K. Uniqueness:

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

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 **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments:

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (check) **Y** ◉ **N** ○ (if 'Yes' continue with the evaluation; if 'No' then click ☐ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ☑ Educational/scientific study; ☐ Consumptive rec.; ☑ Non-consumptive rec.; ☐ Other

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

Public ownership - no permission required. Unkown if it will become a recreation area.

General Site Notes

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

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	.3	1	1.926	☐
B. MT Natural Heritage Program Species Habitat	L	.1	1	0.642	☐
C. General Wildlife Habitat	H	.9	1	5.778	☑
D. General Fish Habitat	NA	0	0	0	☐
E. Flood Attenuation	M	.6	1	3.852	☐
F. Short and Long Term Surface Water Storage	H	1	1	6.42	☑
G. Sediment/Nutrient/Toxicant Removal	M	.7	1	4.494	☑
H. Sediment/Shoreline Stabilization	M	.7	1	4.494	☐
I. Production Export/Food Chain Support	H	.8	1	5.136	☐
J. Groundwater Discharge/Recharge	H	1	1	6.42	☑
K. Uniqueness	M	.4	1	2.568	☐
L. Recreation/Education Potential (bonus points)	H	.15	NA	0.963	☐
Totals:		6.65	10	42.693	
Percent of Possible Score			**66.5** %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
- ☐ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
- ☐ Score of 1 functional point for Uniqueness; **or**
- ☐ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
- ☐ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
- ☐ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
- ☑ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish Habitat; **or**
- ☐ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
- ☐ Score of .9 functional point for Uniqueness; **or**
- ☐ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

☐

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
- ☐ Percent of possible score < 35% (round to nearest whole #).

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

I	II	III	IV

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name McGinnis Meadows **2. MDT project#** NH 27(17) **Control#**

3. Evaluation Date 8/7/2011 **4. Evaluators** J. Asebrook, J. Hintz **5. Wetland/Site# (s)** Enhancement

6. Wetland Location(s): T 26N **R** 28W **Sec1** 33 **T** **R** **Sec2**

Approx Stationing or Mileposts NA

Watershed 17010102 **Watershed/County** Kootenai River Watershed/Lincoln County

7. Evaluating Agency Confluence for MDT

8. Wetland size acres 1.32

Purpose of Evaluation

How assessed: Measured e.g. by GPS

☐ **Wetlands potentially affected by MDT project**

9. Assesssment area (AA) size (acres) 1.32

☐ **Mitigation Wetlands: pre-construction**

How assessed: Measured e.g. by GPS

☑ **Mitigation Wetlands: post construction**

☐ **Other**

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Depressional	Emergent Wetland		Temporary/Ephemeral	100

11. Estimated Relative Abundance Common

12. General Condition of AA

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) 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%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=30%.	moderate	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >=30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc)

Area includes existing emergent wetland along intermittent drainage. This AA exhibited a reduction in wetland acreage based on the lack of wetland hydrology and hydric soils indicators at data point M-2U. Wetland acreage within this AA likely to increase as wetland indicators develop.

ii. Prominent noxious, aquatic nuisance, other exotic species:

Cirsium arvense

iii. Provide brief descriptive summary of AA and surrounding land use/habitat

AA includes existing emergent wetland. Surrounding land use includes residential, moderate road density, and forested habitat.

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 preventing (passive) existence of additional vegetated classes?		Modified Rating
>=3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	M	<NO	YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

Comments: Emergent vegetation present.

SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

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

Primary or critical habitat (list species)	◉ D ◉ S	
Secondary habitat (list Species)	◉ D ◉ S	
Incidental habitat (list species)	◉ D ○ S	grizzly bear, Canada lynx
No usable habitat	▣ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8H	.7M	.3L	.1L	0L

Sources for documented use USFWS, observation of grizzly bear by adjacent landowner.

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

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

Primary or critical habitat (list species)	◉ D ◉ S	
Secondary habitat (list Species)	◉ D ◉ S	
Incidental habitat (list species)	○ D ◉ S	Pileated woodpecker (S3)
No usable habitat	▣ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use MNHP listed for Lincoln County

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence):

Moderate

Substantial (based on any of the following [check]):

- ☐ observations of abundant wildlife #s or high species diversity (during any period)
- ☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ presence of extremely limiting habitat features not available in the surrounding area
- ☐ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ☐ few or no wildlife observations during peak use periods
- ☐ little to no wildlife sign
- ☐ sparse adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ☑ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ adequate adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

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

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Low
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments AA connected to wilderness habitat.

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

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

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 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?* **Y** ◯ **N** ◉ *If yes, reduce score in* ***i*** *above by 0.1:* **Modified Rating**

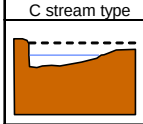
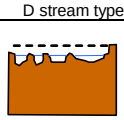
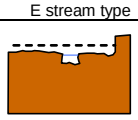
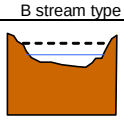
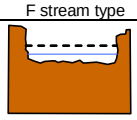
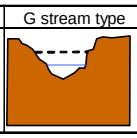
b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ◯ **Y** ◉ **N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*
Modifed Rating

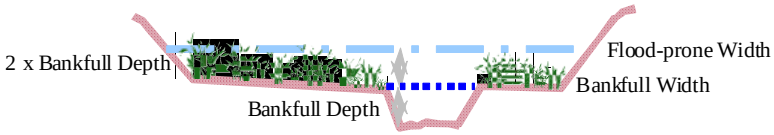
iii. Final Score and Rating: 0 NA **Comments:**

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Slightly Entrenched ER = >2.2			**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
						



Floodrpone width 18 **/** **Bankfull width** 6 **=** **Entrenchment ratio** 3

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 (check)? **Y** ◯ **N** ◉

Comments: Area subject to periodic overbank flooding from restored McGinnis Creek.

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

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

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: AA only 0.17-acre in size.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands 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, click ☐ **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% 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**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: Well vegetated by sedge with no outlet.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or 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, click ☑ **NA** here and proceed to 14I.)

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

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments: No open water present within AA.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [check])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	H	M	L

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

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component <1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9	.6M	.7H	.4	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8	.5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? **Y** ◉ **N** ○ *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* **Modified Rating** .3L

Comments: AA 0.17-acre with well-vegetated buffer.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

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:

ii. Recharge Indicators

- ☐ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge volume decreases
- ☐ Other:

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

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information		NA		

Comments: AA with ephemeral hydrology during spring.

14K. Uniqueness:

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

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 **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments:

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (check) **Y** ◉ **N** ○ (if 'Yes' continue with the evaluation; if 'No' then click ☐ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ☑ Educational/scientific study; ☐ Consumptive rec.; ☑ Non-consumptive rec.; ☐ Other

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

Public ownership - no permission required. Unkown if it will become a recreation area.

General Site Notes

Classified as a wetland in 2010 but there was not wetland hydrology in 2011. Vegetation is monoculture of reed canarygrass that can persist when water levels have changed. Currently not delineated as a wetland in 2011.

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

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	.3	1	0.396	☑
B. MT Natural Heritage Program Species Habitat	L	.1	1	0.132	☐
C. General Wildlife Habitat	M	.5	1	0.66	☑
D. General Fish Habitat	NA	0	0	0	☐
E. Flood Attenuation	M	.6	1	0.792	☑
F. Short and Long Term Surface Water Storage	L	.1	1	0.132	☐
G. Sediment/Nutrient/Toxicant Removal	H	.8	1	1.056	☑
H. Sediment/Shoreline Stabilization	NA	0	0	0	☐
I. Production Export/Food Chain Support	L	.3	1	0.396	☐
J. Groundwater Discharge/Recharge	NA	0	0	0	☐
K. Uniqueness	M	.4	1	0.528	☐
L. Recreation/Education Potential (bonus points)	H	.15	NA	0.198	☐
Totals:		3.25	8	4.29	
Percent of Possible Score			**40.63** %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
- ☐ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
- ☐ Score of 1 functional point for Uniqueness; **or**
- ☐ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
- ☐ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
- ☐ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish Habitat; **or**
- ☐ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
- ☐ Score of .9 functional point for Uniqueness; **or**
- ☐ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

☑

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
- ☐ Percent of possible score < 35% (round to nearest whole #).

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

I	II	III	IV

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name McGinnis Meadows **2. MDT project#** NH 27(17) **Control#**

3. Evaluation Date 8/7/2011 **4. Evaluators** J. Asebrook, J. Hintz **5. Wetland/Site# (s)** Preservation

6. Wetland Location(s): T 26N **R** 28W **Sec1** 33 **T** **R** **Sec2**

Approx Stationing or Mileposts NA

Watershed 17010102 **Watershed/County** Kootenai River Watershed/Lincoln County

7. Evaluating Agency Confluence for MDT

8. Wetland size acres 0.3

Purpose of Evaluation

How assessed: Measured e.g. by GPS

☐ **Wetlands potentially affected by MDT project**

9. Assesssment area (AA) size (acres) 0.3

☐ **Mitigation Wetlands: pre-construction**

How assessed: Measured e.g. by GPS

☑ **Mitigation Wetlands: post construction**

☐ **Other**

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Riverine	Scrub-Shrub Wetland	Impounded	Permanent/Perennial	50
Riverine	Emergent Wetland		Permanent/Perennial	50

11. Estimated Relative Abundance Common

12. General Condition of AA

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) 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%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=30%.	moderate	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >=30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc)

Currently low disturbance to ditch community.

ii. Prominent noxious, aquatic nuisance, other exotic species:

Cirsium arvense

iii. Provide brief descriptive summary of AA and surrounding land use/habitat

AA includes abandonded ditch (McGinnis Creek) when McGinnis Creek planform was restored. Ditch community runs north-south through the property. AA encompassed within McGinnis Meadows conservation easement. Surrounding habitat include undisturbed upland areas and other AAs.

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 preventing (passive) existence of additional vegetated classes?		Modified Rating
>=3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	M	<NO	YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

Comments:

SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

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

Primary or critical habitat (list species)	○ D ○ S	
Secondary habitat (list Species)	○ D ○ S	
Incidental habitat (list species)	◉ D ○ S	grizzly bear, Canada lynx
No usable habitat	☐ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8H	.7M	.3L	.1L	0L

Sources for documented use USFWS, observation of grizzly bear by adjacent landowner.

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

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

Primary or critical habitat (list species)	○ D ○ S	
Secondary habitat (list Species)	○ D ○ S	
Incidental habitat (list species)	○ D ◉ S	Pileated woodpecker (S3)
No usable habitat	☐ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use MNHP listed for Lincoln County

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence):

Moderate

Substantial (based on any of the following [check]):

- ☐ observations of abundant wildlife #s or high species diversity (during any period)
- ☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ presence of extremely limiting habitat features not available in the surrounding area
- ☐ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ☐ few or no wildlife observations during peak use periods
- ☐ little to no wildlife sign
- ☐ sparse adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ☑ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ adequate adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

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

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Low
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments AA connected to wilderness habitat.

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

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

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 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?* **Y** ◯ **N** ◉ *If yes, reduce score in* ***i*** *above by 0.1:* **Modified Rating**

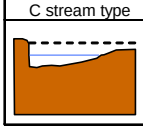
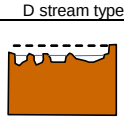
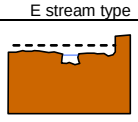
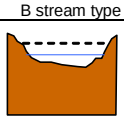
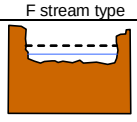
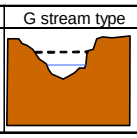
b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ◯ **Y** ◉ **N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*
Modifed Rating

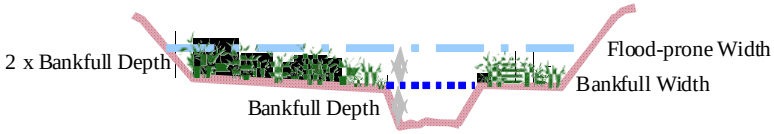
iii. Final Score and Rating: 0 NA **Comments:**

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Slightly Entrenched ER = >2.2			**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
						



Floodrpone width 18 **/** **Bankfull width** 6 **=** **Entrenchment ratio** 3

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 (check)? **Y** ◯ **N** ◉

Comments: AA subject to periodic overbank flow from McGinnis Creek.

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

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

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: AA includes abandonded ditch with potential to store several feet of surface water in areas (0.53acx2-3ft).

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands 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, click ☐ **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% 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**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: Well-vegetated with no outlet.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or 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, click ☐ **NA** here and proceed to 14I.)

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

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments: Assumes open water areas subject to wave action, AA well-vegetated.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [check])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	H	M	L

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

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component <1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9	.6M	.7H	.4	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8	.5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? **Y** ◉ **N** ○ *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* **Modified Rating** .7M

Comments: AA 0.3-acre, no surface outlet and well-vegetated buffer.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

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:

ii. Recharge Indicators

- ☐ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge volume decreases
- ☐ Other:

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

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information		NA		

Comments: Shallow water table contributes surface water to abandoned ditch.

14K. Uniqueness:

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

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 **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments:

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (check) **Y** ◉ **N** ○ (if 'Yes' continue with the evaluation; if 'No' then click ☐ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ☑ Educational/scientific study; ☐ Consumptive rec.; ☑ Non-consumptive rec.; ☐ Other

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

Public ownership - no permission required. Unkown if it will become a recreation area.

General Site Notes

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

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	.3	1	0.09	☐
B. MT Natural Heritage Program Species Habitat	L	.1	1	0.03	☐
C. General Wildlife Habitat	H	.9	1	0.27	☑
D. General Fish Habitat	NA	0	0	0	☐
E. Flood Attenuation	H	.9	1	0.27	☐
F. Short and Long Term Surface Water Storage	H	.8	1	0.24	☐
G. Sediment/Nutrient/Toxicant Removal	H	1	1	0.3	☑
H. Sediment/Shoreline Stabilization	H	1	1	0.3	☑
I. Production Export/Food Chain Support	M	.7	1	0.21	☐
J. Groundwater Discharge/Recharge	H	1	1	0.3	☑
K. Uniqueness	M	.4	1	0.12	☐
L. Recreation/Education Potential (bonus points)	H	.15	NA	0.045	☐
Totals:		7.25	10	2.175	
Percent of Possible Score			**72.5** %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
- ☐ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
- ☐ Score of 1 functional point for Uniqueness; **or**
- ☐ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
- ☐ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
- ☐ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
- ☑ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish Habitat; **or**
- ☐ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
- ☐ Score of .9 functional point for Uniqueness; **or**
- ☑ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

☐

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
- ☐ Percent of possible score < 35% (round to nearest whole #).

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

I	II	III	IV

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name McGinnis Meadows **2. MDT project#** NH 27(17) **Control#**

3. Evaluation Date 8/7/2011 **4. Evaluators** J. Asebrook, J. Hintz **5. Wetland/Site# (s)** Restoration

6. Wetland Location(s): T 26N **R** 28W **Sec1** 33 **T** **R** **Sec2**

Approx Stationing or Mileposts NA

Watershed 17010102 **Watershed/County** Kootenai River Watershed/Lincoln County

7. Evaluating Agency Confluence for MDT

8. Wetland size acres 12.6

Purpose of Evaluation

How assessed: Measured e.g. by GPS

☐ **Wetlands potentially affected by MDT project**

9. Assesssment area (AA) size (acres) 12.6

☐ **Mitigation Wetlands: pre-construction**

How assessed: Measured e.g. by GPS

☑ **Mitigation Wetlands: post construction**

☐ **Other**

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Riverine	Emergent Wetland		Permanent/Perennial	5
Depressional	Emergent Wetland		Permanent/Perennial	95

11. Estimated Relative Abundance Common

12. General Condition of AA

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) 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%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=30%.	moderate	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >=30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc)

Low disturbance in 2011 now that construction is over.

ii. Prominent noxious, aquatic nuisance, other exotic species:

Cirsium arvense

iii. Provide brief descriptive summary of AA and surrounding land use/habitat

AA includes previously delineated wetland areas within easement boundary. AA decreased in size in 2011 due to marginal wetland indicators through portions of this AA identified in 2010. Adjacent land use to AA includes low density residential, moderate road density and forested habitat.

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 preventing (passive) existence of additional vegetated classes?		Modified Rating
>=3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	M	<NO	YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

Comments:

SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

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

Primary or critical habitat (list species)	○ D ○ S	
Secondary habitat (list Species)	○ D ○ S	
Incidental habitat (list species)	◉ D ○ S	Grizzly bear, Canada lynx
No usable habitat	☐ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8H	.7M	.3L	.1L	0L

Sources for documented use USFWS, observation of grizzly bear by adjacent landowner.

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

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

Primary or critical habitat (list species)	○ D ○ S	
Secondary habitat (list Species)	◉ D ○ S	Westslope cutthroat trout, Columbia River red-band trout (S1)
Incidental habitat (list species)	○ D ◉ S	Pileated woodpecker (S3)
No usable habitat	☐ S	

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

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use MFWP surveyed, MNHP listed for Lincoln County.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence): Moderate

Substantial (based on any of the following [check]):

- ☐ observations of abundant wildlife #s or high species diversity (during any period)
- ☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ presence of extremely limiting habitat features not available in the surrounding area
- ☐ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ☐ few or no wildlife observations during peak use periods
- ☐ little to no wildlife sign
- ☐ sparse adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ☑ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ adequate adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

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

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Low
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments AA connected to wilderness habitat.

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

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

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 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?* **Y** ◯ **N** ◉ *If yes, reduce score in* ***i*** *above by 0.1:* **Modified Rating**

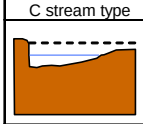
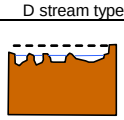
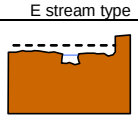
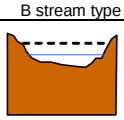
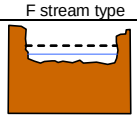
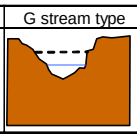
b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ◯ **Y** ◉ **N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*
Modifed Rating

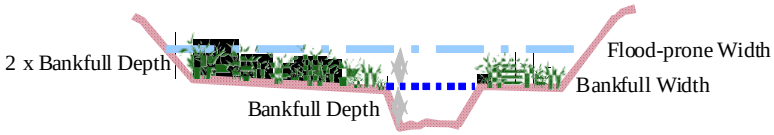
iii. Final Score and Rating: .8 H **Comments:**

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Slightly Entrenched ER = >2.2			**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
						



Floodrpone width 18 **/** **Bankfull width** 6 **=** **Entrenchment ratio** 3

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 (check)? **Y** ◉ **N** ◯

Comments: Residential house located directly north of AA; elevated above flooplain and not subject to flooding. Road and culvert located directly downstream.

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

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

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: 10.7ac with 0.5ft inundation

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands 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, click ☐ **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% 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**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: Area receives surface runoff during precipitation events.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or 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, click ☐ **NA** here and proceed to 14I.)

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

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments: Open water areas subject to wave action, streambank subject to erosion.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [check])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	H	M	L

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

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component <1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9	.6M	.7H	.4	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8	.5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? **Y** ◉ **N** ○ *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* **Modified Rating** 1 E

Comments: AA 10.7 acres in size, well-vegetated with high biological activity.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

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:

ii. Recharge Indicators

- ☐ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge volume decreases
- ☐ Other:

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

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information		NA		

Comments: Increased water table elevation saturates majority of AA to surface.

14K. Uniqueness:

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

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 **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments:

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (check) **Y** ◉ **N** ○ (if 'Yes' continue with the evaluation; if 'No' then click ☐ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ☑ Educational/scientific study; ☐ Consumptive rec.; ☑ Non-consumptive rec.; ☐ Other

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

Public ownership - no permission required. Unkown if it will become a recreation area.

General Site Notes

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

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	.3	1	3.78	☐
B. MT Natural Heritage Program Species Habitat	M	.6	1	7.56	☐
C. General Wildlife Habitat	H	.9	1	11.34	☐
D. General Fish Habitat	H	.8	1	10.08	☐
E. Flood Attenuation	H	.8	1	10.08	☐
F. Short and Long Term Surface Water Storage	H	1	1	12.6	☑
G. Sediment/Nutrient/Toxicant Removal	H	.9	1	11.34	☑
H. Sediment/Shoreline Stabilization	M	.7	1	8.82	☐
I. Production Export/Food Chain Support	E	1	1	12.6	☑
J. Groundwater Discharge/Recharge	H	1	1	12.6	☑
K. Uniqueness	M	.4	1	5.04	☐
L. Recreation/Education Potential (bonus points)	H	.15	NA	1.89	☐
Totals:		8.55	11	107.73	
Percent of Possible Score			**77.73** %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
- ☐ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
- ☐ Score of 1 functional point for Uniqueness; **or**
- ☐ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
- ☐ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
- ☐ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
- ☑ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish Habitat; **or**
- ☐ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
- ☐ Score of .9 functional point for Uniqueness; **or**
- ☑ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

☐

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
- ☐ Percent of possible score < 35% (round to nearest whole #).

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

I	II	III	IV

Appendix C

Project Area Photographs

MDT Wetland Mitigation Monitoring
McGinnis Meadows
Lincoln County, Montana



Photo Point 1 – *Photo 1* **Location:** PP1
Bearing: 250 degrees **Taken in 2010**



Photo Point 1 – *Photo 1* **Location:** PP1
Bearing: 250 degrees **Taken in 2011**



Photo Point 1 – *Photo 2* **Location:** PP1
Bearing: 270 degrees **Taken in 2010**



Photo Point 1 – *Photo 2* **Location:** PP1
Bearing: 270 degrees **Taken in 2011**



Photo Point 1 – *Photo 3* **Location:** PP1
Bearing: 300 degrees **Taken in 2010**



Photo Point 1 – *Photo 3* **Location:** PP1
Bearing: 300 degrees **Taken in 2011**



Photo Point 2 – *Photo 1* **Location:** PP2
Bearing: 85 degrees **Taken in 2010**



Photo Point 2 – *Photo 1* **Location:** PP2
Bearing: 85 degrees **Taken in 2011**



Photo Point 2 – *Photo 2* **Location:** PP2
Bearing: 110 degrees **Taken in 2010**



Photo Point 2 – *Photo 2* **Location:** PP2
Bearing: 110 degrees **Taken in 2011**



Photo Point 2 – *Photo 3* **Location:** PP2
Bearing: 140 degrees **Taken in 2010**



Photo Point 2 – *Photo 3* **Location:** PP2
Bearing: 140 degrees **Taken in 2011**



Photo Point 2 – *Photo 4*
Bearing: 180 degrees
Location: PP2
Taken in 2010



Photo Point 2 – *Photo 4*
Bearing: 180 degrees
Location: PP2
Taken in 2011



Photo Point 3 – *Photo 1*
Bearing: 300-10 degrees
Location: PP3
Taken in 2010



Photo Point 3 – *Photo 1*
Bearing: 300-10 degrees
Location: PP3
Taken in 2011



Photo Point 4 – *Photo 1*
Bearing: 310-90 degrees

Location: PP4
Taken in 2010



Photo Point 4 – *Photo 1*
Bearing: 310-90 degrees

Location: PP4
Taken in 2011



Photo Point 5 – *Photo 1*
Bearing: 80-180 degrees

Location: PP5
Taken in 2010



Photo Point 5 – *Photo 1*
Bearing: 80-180 degrees

Location: PP5
Taken in 2011



Photo Point 6 – *Photo 1*
Bearing: 180-260 degrees

Location: PP6
Taken in 2010



Photo Point 6 – *Photo 1*
Bearing: 180-260 degrees

Location: PP6
Taken in 2011



Photo Point 7 – *Photo 1*
Bearing: 180-240 degrees

Location: PP7
Taken in 2010



Photo Point 7 – *Photo 1*
Bearing: 180-240 degrees

Location: PP7
Taken in 2011



Transect 1 – *Start*
Bearing: 330 degrees
Location: T-1
Taken in 2010



Transect 1 – *Start*
Bearing: 330 degrees
Location: T-1
Taken in 2011



Transect 1 – *Finish*
Bearing: 150 degrees
Location: T-1
Taken in 2010



Transect 1 – *Finish*
Bearing: 150 degrees
Location: T-1
Taken in 2011



Transect 2 – *Start*
Bearing: 0 Degrees
Location: T-2
Taken in 2010



Transect 2 – *Start*
Bearing: 0 Degrees
Location: T-2
Taken in 2011



Transect 2 – *Finish*
Bearing: 180 Degrees
Location: T-2
Taken in 2010



Transect 2 – *Finish*
Bearing: 180 Degrees
Location: T-2
Taken in 2011



Cross-Section 1 – *Photo 1*
Bearing: 275 degrees
Location: XS-1 downstream
Taken in 2010



Cross-Section 1 – *Photo 1*
Bearing: 275 degrees
Location: XS-1 downstream
Taken in 2011



Cross-Section 1 – *Photo 2*
Bearing: 290 degrees
Location: XS-1 downstream
Taken in 2010



Cross-Section 1 – *Photo 2*
Bearing: 290 degrees
Location: XS-1 downstream
Taken in 2011



Cross-Section 1 – *Photo 3*
Bearing: 110 Degrees

Location: XS-1 upstream
Taken in 2010



Cross-Section 1 – *Photo 3*
Bearing: 110 Degrees

Location: XS-1 upstream
Taken in 2011



Cross-Section 2 – *Photo 1*
Bearing: 70 Degrees

Location: XS-2 upstream
Taken in 2010



Cross-Section 2 – *Photo 1*
Bearing: 70 Degrees

Location: XS-2 upstream
Taken in 2011



Cross-Section 2 – *Photo 2*
Bearing: 350 Degrees

Location: XS-2 downstream
Taken in 2010



Cross-Section 2 – *Photo 2*
Bearing: 350 Degrees

Location: XS-2 downstream
Taken in 2011



Cross-Section 3 – *Photo 1*
Bearing: 270 Degrees

Location: XS-3 upstream
Taken in 2010



Cross-Section 3 – *Photo 1*
Bearing: 270 Degrees

Location: XS-3 upstream
Taken in 2011



Cross-Section 3 – *Photo 2*
Bearing: 270 Degrees

Location: XS-3 upstream
Taken in 2011



Cross-Section 3 – *Photo 2*
Bearing: 90 Degrees

Location: XS-3 downstream
Taken in 2010



Cross-Section 3 – *Photo 2*
Bearing: 90 Degrees

Location: XS-3 downstream
Taken in 2011



Data Point M-1w
Bearing:

Location: Veg com 13
Taken in 2011



Data Point M-1u
Bearing:

Location: Veg com 1
Taken in 2011



Data Point M-4u
Bearing:

Location: Veg com 7
Taken in 2011



Data Point M-4w
Bearing:

Location: Veg com 13
Taken in 2011



Data Point M-5w
Bearing:

Location: Veg com 9
Taken in 2011



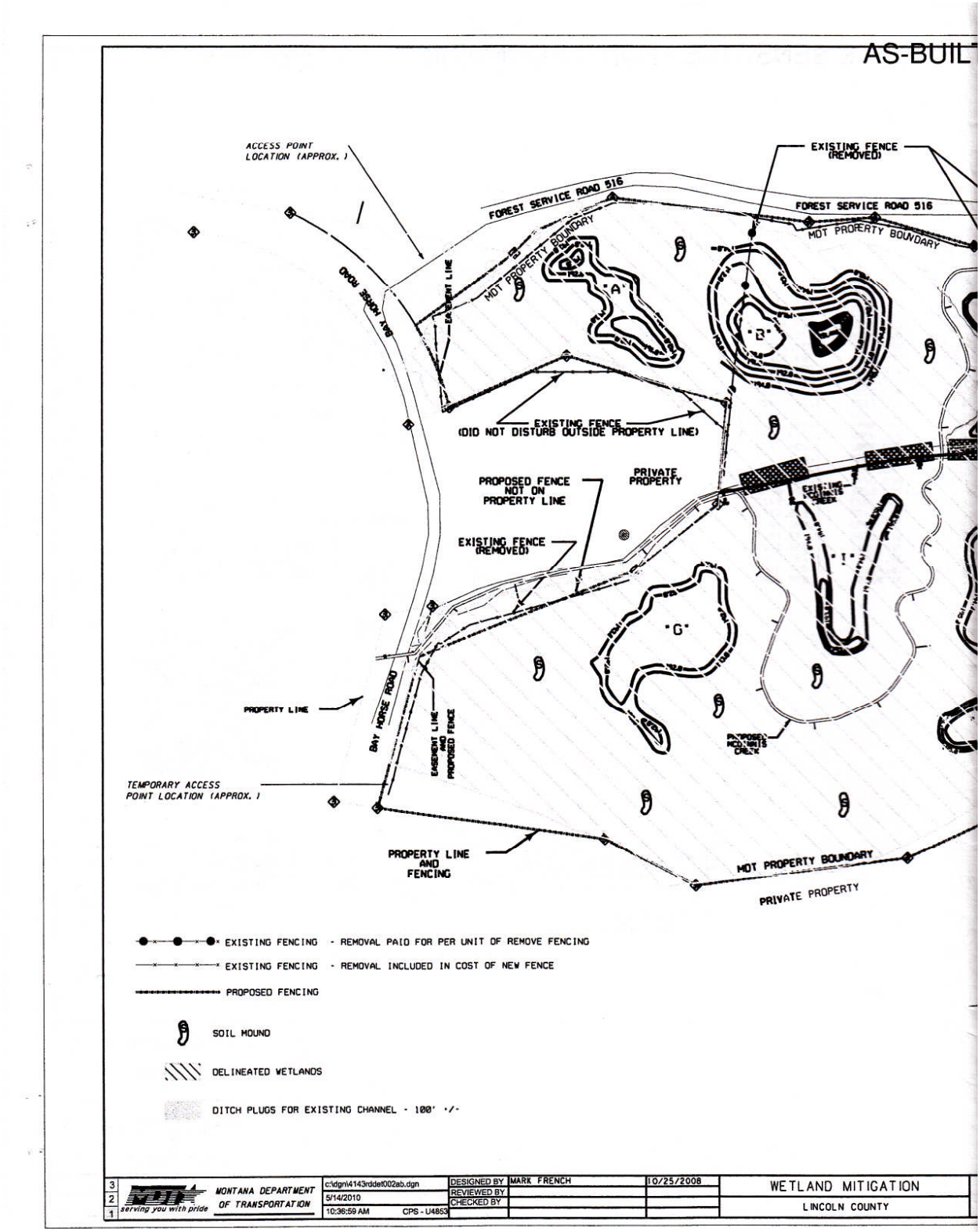
Data Point M-6u
Bearing:

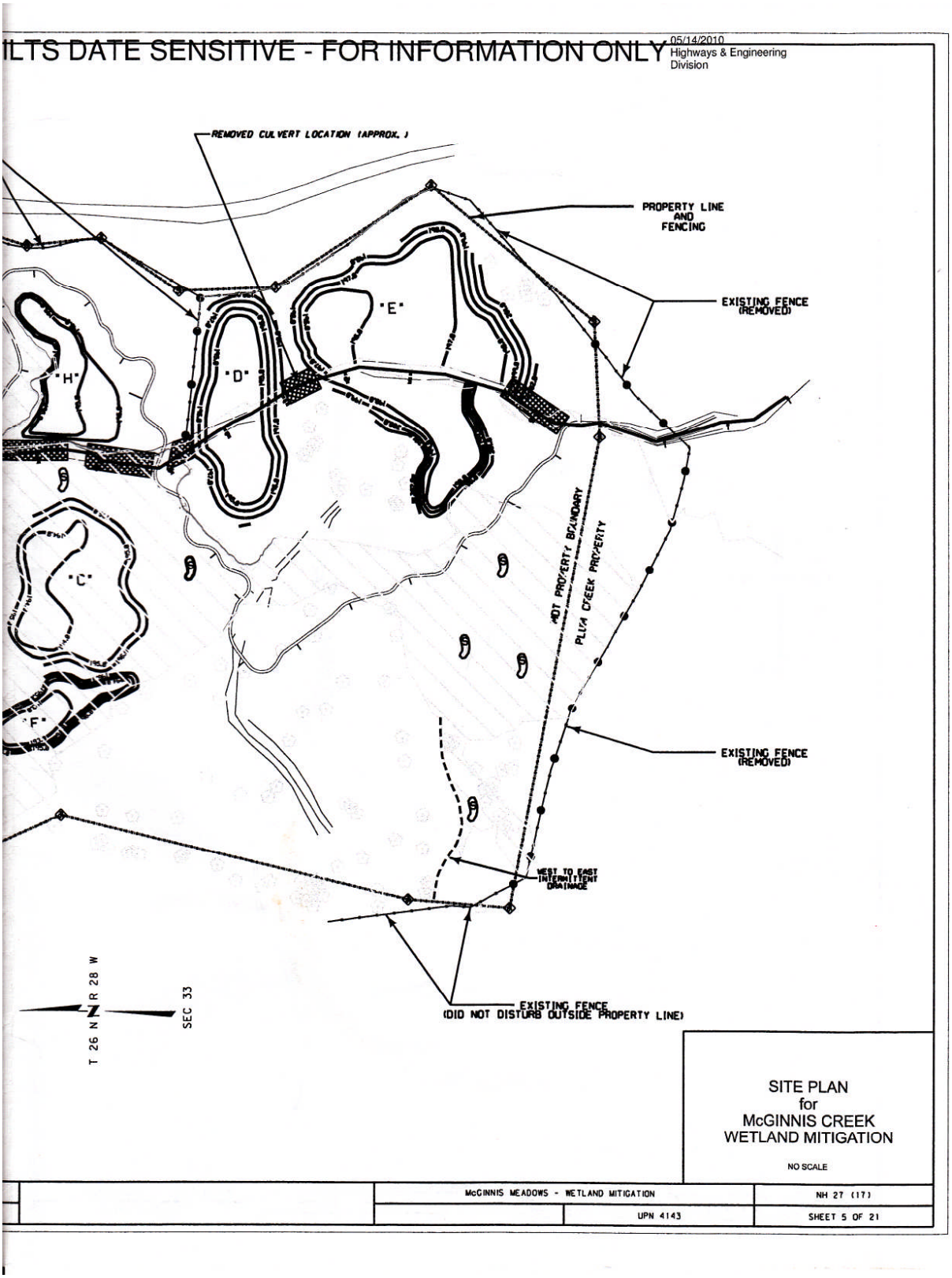
Location: Veg com 1
Taken in 2011

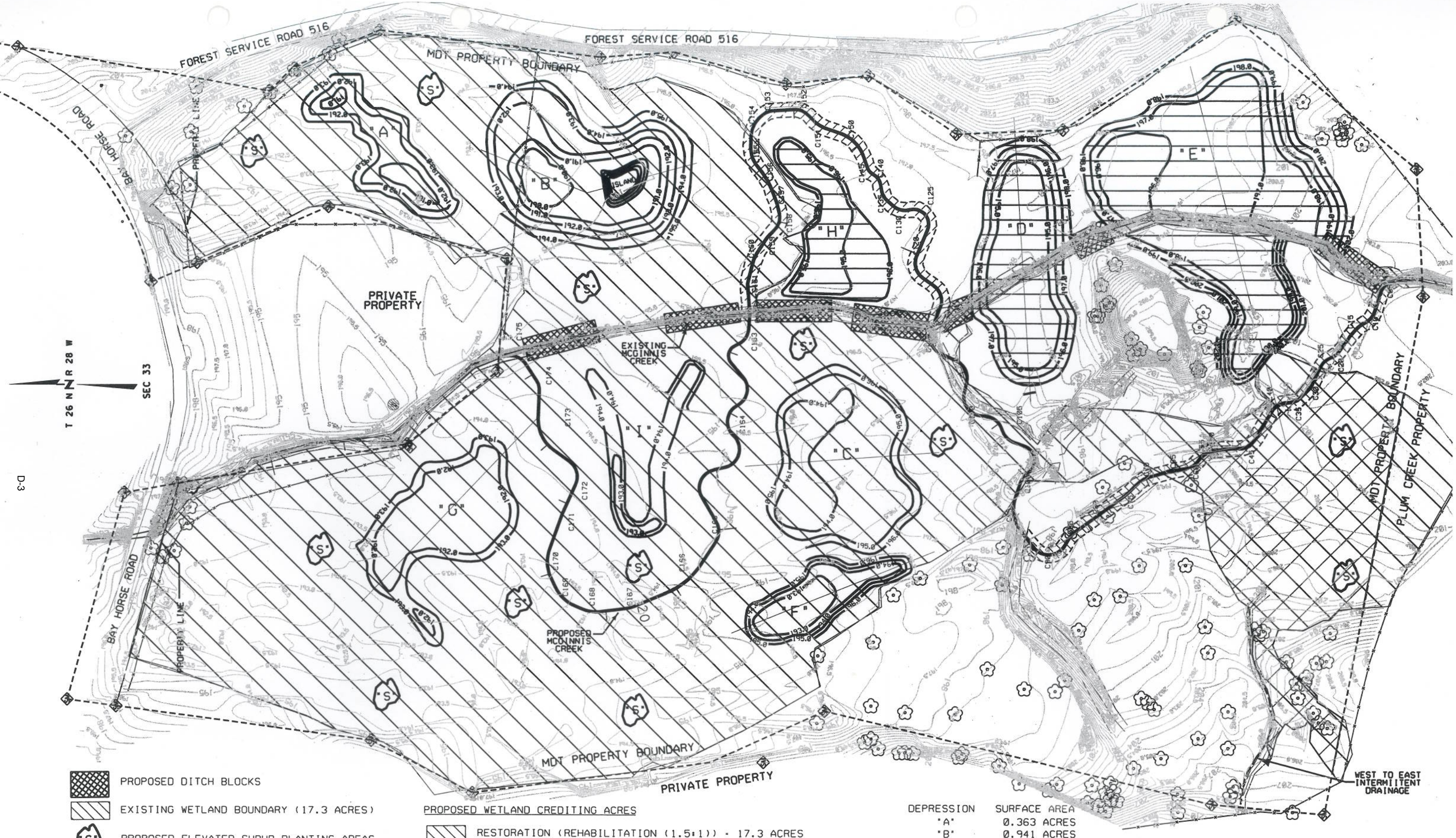
Appendix D

Project Plan Sheet

MDT Wetland Mitigation Monitoring
McGinnis Meadows
Lincoln County, Montana


AS-BUIL
ACCESS POINT LOCATION (APPROX.)
FOREST SERVICE ROAD 516
EXISTING FENCE (REMOVED)
FOREST SERVICE ROAD 516
MDT PROPERTY BOUNDARY
BAY HORSE ROAD
EASEMENT LINE
MDT PROPERTY BOUNDARY
"A"
"B"
EXISTING FENCE (DID NOT DISTURB OUTSIDE PROPERTY LINE)
PROPOSED FENCE NOT ON PROPERTY LINE
PRIVATE PROPERTY
EXISTING FENCE (REMOVED)
"G"
PROPERTY LINE
BAY HORSE ROAD
EASEMENT LINE AND PROPOSED FENCE
TEMPORARY ACCESS POINT LOCATION (APPROX.)
PROPERTY LINE AND FENCING
MDT PROPERTY BOUNDARY
PRIVATE PROPERTY
EXISTING FENCING - REMOVAL PAID FOR PER UNIT OF REMOVE FENCING
EXISTING FENCING - REMOVAL INCLUDED IN COST OF NEW FENCE
PROPOSED FENCING
SOIL MOUND
DELINEATED WETLANDS
DITCH PLUGS FOR EXISTING CHANNEL - 100' +/-
MONTANA DEPARTMENT OF TRANSPORTATION
serving you with pride
c:\dgn\4143rddet002ab.dgn
5/14/2010
10:36:59 AM
CPS - U4853
DESIGNED BY MARK FRENCH
REVIEWED BY
CHECKED BY
10/25/2008
WETLAND MITIGATION
LINCOLN COUNTY


ILTS DATE SENSITIVE - FOR INFORMATION ONLY
05/14/2010
Highways & Engineering Division
REMOVED CULVERT LOCATION (APPROX.)
PROPERTY LINE AND FENCING
EXISTING FENCE (REMOVED)
"E"
"D"
"H"
"C"
"F"
MDT PROPERTY BOUNDARY
PLUM CREEK PROPERTY
EXISTING FENCE (REMOVED)
WEST TO EAST INTERMITTENT DRAINAGE
EXISTING FENCE (DID NOT DISTURB OUTSIDE PROPERTY LINE)
T 26 N R 28 W
SEC 33
SITE PLAN
for
McGINNIS CREEK
WETLAND MITIGATION
NO SCALE
McGINNIS MEADOWS - WETLAND MITIGATION
NH 27 (17)
UPN 4143
SHEET 5 OF 21



PROPOSED DITCH BLOCKS

EXISTING WETLAND BOUNDARY (17.3 ACRES)

PROPOSED ELEVATED SHRUB PLANTING AREAS

1,306.79' - LINEAR LENGTH OF - EXISTING STREAM
2,845.78' - LINEAR LENGTH OF - PROPOSED STREAM

PROPOSED WETLAND CREDITING ACRES

RESTORATION (REHABILITATION (1.5:1)) - 17.3 ACRES

WETLAND CREATION (1:1) - 2.90 ACRES (DEPRESSIONS D,E&H)

WETLAND/STREAM RESTORATION (RE-ESTABLISHMENT (1:1)) - 0.80 ACRES

WETLAND ENHANCEMENT (3:1) - 1.74 ACRES

DEPRESSION	SURFACE AREA
"A"	0.363 ACRES
"B"	0.941 ACRES
"C"	0.844 ACRES
"D"	0.861 ACRES
"E"	1.626 ACRES
"F"	0.276 ACRES
"G"	0.632 ACRES
"H"	0.413 ACRES
"I"	0.224 ACRES
TOTAL	6.18 ACRES

SCALE - 1' = 120'

0 60 120 240 360

FIGURE A: CONCEPTUAL PLAN