MONTANA DEPARTMENT OF TRANSPORTATION
WETLAND MITIGATION MONITORING REPORT: YEAR 2011

Sportsman's Campground
Deer Lodge County, Montana

Prepared for:

MONTANA DEPARTMENT OF TRANSPORTATION
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Helena, MT 59620-1001

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December 2011

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MDT Project Number STPP 46-5(12)51
Control Number A137

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Cover: The view is of Sportsman's Campground mitigation site looking east.

1. INTRODUCTION

The Sportsman's Campground Wetland Mitigation 2011 Monitoring Report documents the fourth year of monitoring at the Sportsman's Campground mitigation site. The wetland mitigation project was constructed in 2007 by the Montana Department of Transportation (MDT). The purpose of the project was to create approximately 15.6 acres of palustrine emergent, scrub/shrub, and aquatic bed wetland habitat to serve as compensatory wetland mitigation for the MDT's Sportsman's Campground East and Dickie Bridge reconstruction projects. Wetland impacts associated with these two MDT road projects totaled 14.36 acres, with an additional 0.18 acres of impact to existing wetlands that occurred during the mitigation project construction.

The project is located on Montana Department of Natural Resources and Conservation (DNRC) land that is protected by an MDT Wetland Conservation Easement. The site borders Montana State Highway 43, approximately 13 miles west of Wise River, Montana (Figure 1). The property is legally described as the northeast quarter of the northeast quarter of Section 36, Township 2 North, Range 13 West, Deer Lodge County. Figures 2 and 3 (Appendix A) show the Monitoring Activity Locations and Mapped Site Features, respectively. Appendix B contains the MDT Wetland Mitigation Site Monitoring Form, the US Army Corps of Engineers (USACE) 1987 Wetland Determination Data Forms (Environmental Laboratory 1987), and the MDT Montana Wetland Assessment Forms. Appendix C contains project site photographs and Appendix D includes the project plan sheet.

The 24-acre project site was used by MDT for gravel mining, equipment storage, and gravel stockpiling prior to construction of the wetland mitigation site in 2007. Gravel mining for the Sportsman's Campground East highway reconstruction project created a pit approximately 19.2 acres in area. The gravel pit area was excavated to varying depths to provide a range of inundation levels that included permanent, semi-permanent, and seasonal moisture regimes. Four small islands were also included in the design (Appendix D). The mitigation area is assumed to be hydrologically connected via groundwater to the nearby Big Hole River located south of Highway 43. Additional seasonal groundwater recharge is provided by snowmelt from the nearby Pintlar Mountain Range located north of the site.

Wetland habitat developed in two areas within the project site as result of gravel mining activities prior to implementation of the mitigation project. The MDT will receive credit for the pre-existing 1.31 acre open water pond with an emergent/scrub-shrub fringe (Vegetation Community 8) and the pre-existing 0.66 acre emergent marsh wetland located south of the pond area (a portion of Vegetation Community 3) (PBS&J 2009). The wetland communities targeted for development were open water/aquatic bed, scrub/shrub, and shallow marsh/wet meadow to support a diversity of plant and wildlife habitat.

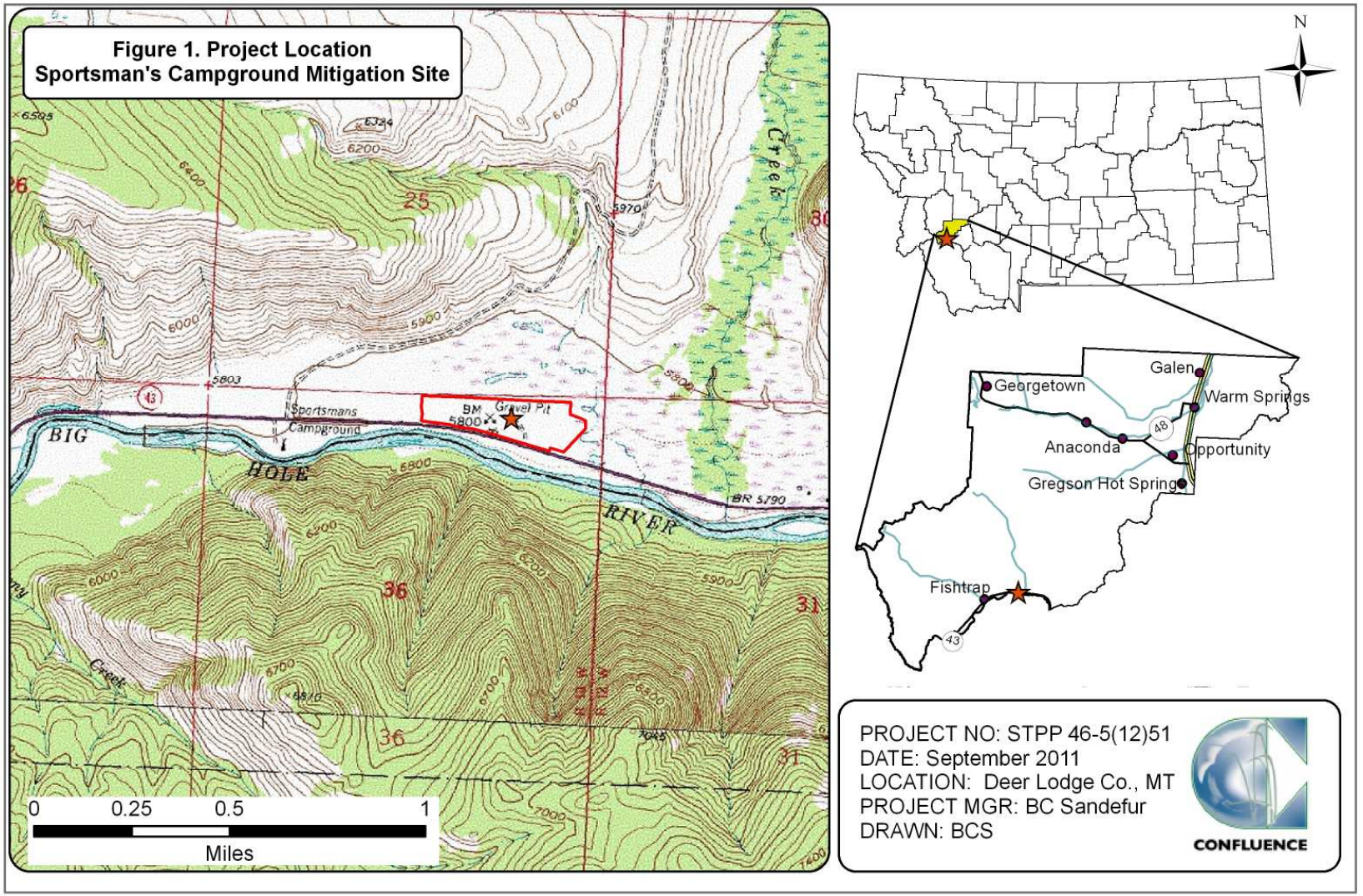

Figure 1. Project Location – Sportsman's Campground Mitigation Site.

2. METHODS

The site was assessed on August 4, 2011. Information contained on the Mitigation Monitoring Form and the Wetland Data Form was entered electronically in the field on a personal digital assistant (PDA) palmtop computer during the field investigation (Appendix B). Monitoring activity locations were mapped using a global positioning system (GPS) (Figure 2, Appendix A). Information collection included a wetland delineation; vegetation community, vegetation transect, soil, and hydrology data; bird and wildlife observations; photographic documentation; 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 growing season are considered jurisdictional wetlands. The growing season 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 frost-free period defined for the geographic area is 30 to 70 days (USDA 2010). Areas defined as wetlands would require a minimum of 4 days of inundation or saturation within 12 inches of the ground surface to meet the hydrology criteria.

Hydrological indicators as outlined on the Wetland Data Form were documented at three data points (Sprt-1 through Sprt-3) established within the project area. Hydrologic indicators were evaluated according to features observed during the site visit. The data were recorded on electronic field data sheets (Appendix B). Hydrologic assessments allow the evaluation of mitigation goals addressing inundation/saturation requirements.

There were no groundwater monitoring wells at the site. Soil pits excavated during the wetland delineation were used to evaluate groundwater levels within 18 inches of the ground surface. The data were recorded electronically on the wetland data form (Appendix B).

2.2. Vegetation

The boundaries of general dominant species-based vegetation communities were determined in the field during the active growing season. The community boundaries were subsequently delineated on a 2011 aerial photograph provided by MDT. The aerial photograph was flown on August 17, 2011. The percent cover of dominant species within a community type was estimated and recorded using the following ranges that are listed on the Mitigation Monitoring Form: 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). Community types were named based on the

predominant vegetation species that characterized each mapped polygon (Figure 3, Appendix).

Temporal changes in vegetation were evaluated through annual assessments of static belt transects (Figure 2, Appendix A). Vegetation composition was assessed and recorded along three vegetation belt transects (T-1, T-2, T-3) approximately 10 feet wide and 391, 400, and 377 feet long, respectively (Figure 2, Appendix A). The transect endpoints were located with a GPS unit. Spatial changes in the dominant vegetation communities were recorded along the stationed transect. Percent cover of each vegetation species within the "belt" was estimated using the same values and cover ranges listed for the community polygon data on the 2011 aerial photograph (Figure 3, Appendix B). Photographs were taken at the transect endpoints during the monitoring event (Appendix C). No woody species were planted at the site precluding the need for an assessment of woody species survival.

The location of noxious weeds was noted in the field and mapped on the aerial photo (Figure 3, Appendix A). 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).

2.3. Soil

Soil information was obtained from the *Soil Survey for Deer Lodge County* (USDA 2010) and *in situ* soil descriptions. Soil cores were excavated using a hand auger and evaluated according to procedures outlined in the USACE 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987). 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 other special aquatic sites were delineated throughout the project area in accordance with criteria established in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). In order to delineate a representative area as wetland, the technical criteria for hydrophytic vegetation, hydric soil, and wetland hydrology 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 Onsite Determination Method (Environmental Laboratory 1987) was used to delineate wetland areas within the project boundaries. The information was recorded electronically on the Wetland Data Form (Appendix B).

The USACE determined that the 1987 Wetland Manual should continue to be used at MDT mitigation sites where baseline wetland conditions had been

established prior to 2008. Consequently, the use of the 2010 Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010) was not required.

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. If 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 for vegetation, soil or hydrology, or special aquatic site, i.e., mudflat. The wetland boundary was delineated on the 2011 aerial photograph. Wetland areas were estimated using geographic information system (GIS) methodology.

2.5. Wildlife

Observations and other positive indicators of use of mammal, reptile, amphibian, and bird species were recorded on the Mitigation 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 wildlife species list for the four years of monitoring was compiled for this report. The species identified in 2011 are listed in bold type.

2.6. Functional Assessment

The 2008 MDT Montana Wetland Assessment Method (MWAM) (Berglund and McEldowney 2008) was used to evaluate functions and values on the site. This method provides an objective means of assigning wetlands an overall rating and provides a means of assessing mitigation success based on wetland functions. Functions are the 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). The initial functional assessment was completed prior to construction using the 1999 MWAM. The 2008 MWAM was used for the first monitoring event completed in 2008. The 2008 revision of the 1999 method refines ratings for some wetland functions, land management, and fish and wildlife habitat.

Field data for this assessment were collected during the site visit. The entire mitigation wetland area was evaluated as one assessment area (AA) (Appendix B).

2.7. Photo Documentation

Photo points provide supplemental information documenting conditions of the wetlands, uplands, monitoring area, and vegetation transects; trends; and current

land uses surrounding the site. Photographs were taken at established photo points throughout the mitigation site and transect end points during the site visit (Pages C-1 to C-8, 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 Thales Pro Mark III GPS unit during the 2011 monitoring season. Points were collected using WAAS-enabled differential correction satellites, typically improving resolution to sub-meter accuracy. 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 within the site were hand-mapped onto the 2011 aerial photograph, then digitized. Site features and survey points that were mapped included fence boundaries, photograph points, transect endpoints, wetland boundaries, and vegetation community boundaries.

2.9. Maintenance Needs

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

3. RESULTS

3.1. Hydrology

The average total annual precipitation recorded from May 1943 to December 2010 at the Wise River 3 WNW meteorological station, Montana (249082) was 11.72 inches (WRCC 2011). Monthly precipitation totals from January through June were 5.17, 8.31, and 5.07 inches in 2009, 2010, and 2011 (NCDC), respectively.

Inundation depths in the open water cells ranged from 0.0 to 4.0 feet with an average depth of 1.0 foot during the August 2011 monitoring event (Monitoring Form, Appendix B). The water depth at the emergent vegetation-open water boundary was 0.8 feet (Figure 3, Appendix A). Approximately 70 percent of the site was inundated on August 4, 2011, in contrast to August 20, 2010, when 30 percent of the site was inundated (Figure 3, Appendix A). The entire area identified in 2011 as Vegetation Community 3 was inundated on August 4, 2011 (see photos in Appendix C). The gravel/cobble bars exposed in August 2010 were inundated on August 4, 2011. The aerial photograph that formed the basis for Figures 2 and 3 was flown on August 17, 2011. The water levels decreased notably between August 4 and August 17, 2011, as reflected in the re-emergence of some of the cobble bars located in the east half of the site.

The three data points (Sprt-1 through Sprt-3 shown on Figure 2, Appendix A) were located within areas that met the wetland criteria. Data point Sprt-1, located within Community 1, exhibited a water table at 3 inches below the ground surface (bgs) and saturation to the ground surface, primary indicators of wetland

hydrology. Data point Sprt-2, located in Community 5, revealed saturation at 12 inches bgs. Sample plot Sprt-3, also located in Community 5, exhibited saturation at 12 inches bgs.

3.2. Vegetation

The project area was historically dominated by native and introduced grass and sagebrush (*Artemisia* spp.), communities that are still present in the adjacent rangelands. Isolated stands of lodgepole pine (*Pinus contorta*) occur along the north and south boundaries of the site.

Ninety-four plant species have been identified onsite from 2008 through 2011 (Table 1). According to the 2009 MDT Monitoring Report, wetland communities began to develop across a majority of the site in 2009. The areas with emergent species typically exhibited a minimum of four inches of topsoil over cobbles and gravels. The cobble/gravel bars (bare areas) had little or no topsoil.

Vegetation community types were mapped based on topography, hydrology, and plant composition. The density and diversity of hydrophytic species continued to develop from 2010 to 2011. The 2011 vegetation communities were Type 1 – *Carex* spp./*Eleocharis palustris* Wetland; Type 2 – *Artemisia tridentata*/*Agropyron* spp. Upland.; Type 3 – *Eleocharis palustris* Wetland; Type 4 – *Salix* spp. Wetland; Type 5 – *Eleocharis palustris*/*Hordeum jubatum* Wetland;; Type 7 – *Populus trichocarpa*/*Salix* spp. Wetland, and Type 8 – Aquatic Macrophytes (Figure 3, Appendix A and Monitoring Form, Appendix B).

Wetland community Type 1 – *Carex* spp./*Eleocharis palustris* was located in the east third of the site where the percent cover of wetland species was greater than 80 percent. Portions of 2010 communities 3, 5, and 6 (Type 6 – *Beckmannia syzigachne*/*Carex* spp. Wetland) were combined to form Community 1 in this area in 2011. The community was dominated by beaked sedge (*Carex utriculata*), short-beaked sedge (*Carex athrostachya*), Nebraska sedge (*Carex nebrascensis*), creeping spikerush *(Eleocharis palustris*), red top (*Agrostis alba*), and tufted hairgrass (*Deschampsia cespitosa*). The cover included five rush (*Juncus* spp.), five sedge (*Carex* spp.) and three willow species (*Salix* spp.). The overall cover of foxtail barley (*Hordeum jubatum*) decreased in 2011. Inundation levels ranged from 2 to 12 inches.

Table 1. Vegetation species observed from 2008 to 2011 at the Sportsman's Campground Wetland Mitigation Site.

Scientific Names	Common Names	Region 9 Indicator Status[1]
Achillea millefolium	yarrow,common	FACU
Agoseris aurantiaca	**false-dandelion,orange-flower**	**FAC**
Agropyron dasystachyum	wheatgrass,thick-spike	FACU-
Agropyron repens	quackgrass	FACU
Agropyron spicatum	wheatgrass,blue-bunch	FACU-
Agropyron trachycaulum	wheatgrass,slender	FAC
Agrostis alba	redtop	FACW
Agrostis stolonifera	bentgrass,spreading	FAC+
Algae, green	algae, green	NL
Alopecurus aequalis	foxtail,short-awn	OBL
Alopecurus pratensis	foxtail,meadow	FACW
Artemisia tridentata	big sagebrush	NL
Aster chilensis	**aster,common California**	**FAC**
Aster spp.		NL
Bassia hirsuta	smother-weed,hairy	NI
Beckmannia syzigachne	sloughgrass,American	OBL
Bidens cernua	**beggar-ticks,nodding**	**FACW+**
Bromus inermis	smooth brome	NL
Bromus japonicus	brome,Japanese	FACU
Bromus tectorum	**cheatgrass**	**NL**
Calamagrostis canadensis	reedgrass,blue-joint	FACW+
Carex aquatilis	**sedge,water**	**OBL**
Carex athrostachya	sedge,slender-beak	FACW
Carex microptera	**sedge,small-wing**	**FAC**
Carex nebrascensis	sedge, Nebraska	OBL
Carex praegracilis	**sedge,clustered field**	**FACW**
Carex prionophylla	sedge,saw-leaf	FACW
*Carex utriculata**	beaked sedge	OBL
Carex vesicaria	sedge,inflated	OBL
Centaurea maculosa	spotted knapweed	NL
Cerastium arvense	**chickweed,mouse-ear**	**FACU**
Cicuta douglasii	**water-hemlock,western**	**OBL**
Cirsium arvense	thistle,creeping	FACU+
Cirsium vulgare	**thistle,bull**	**FACU**
Deschampsia cespitosa	**hairgrass,tufted**	**FACW**
Eleocharis palustris	spikerush,creeping	OBL
Epilobium angustifolium	fireweed	FACU+
Epilobium ciliatum	willow-herb,hairy	FACW-
Equisetum arvense	horsetail,field	FAC
Equisetum hyemale	horsetail,rough	FACW
Festuca pratensis	fescue,meadow	FACU+
Geum macrophyllum	**avens,large-leaf**	**FACW+**

[1]Region 9 (Northwest) (Reed 1988).
New species identified in 2011 are shown in bold type.
*Commonly accepted name not included on 1988 list.

Table 1 (Continued). Vegetation species observed from 2008 to 2011 at the Sportsman's Campground Wetland Mitigation Site.

Scientific Names	Common Names	Region 9 Indicator Status[1]
Glyceria elata	grass,tall manna	FACW+
Glyceria grandis	American mannagrass	NL
Glycyrrhiza lepidota	licorice,American	FAC+
Hordeum brachyantherum	**barley,meadow**	**FACW**
Hordeum jubatum	barley,fox-tail	FAC+
Iva axillaris	sumpweed,small-flower	FAC
Juncus articulatus	**rush,jointed**	**OBL**
Juncus balticus	rush, Baltic	OBL
Juncus bufonius	**rush,toad**	**FACW+**
Juncus compressus	**rush,flattened**	**OBL**
Juncus effusus	rush,soft	FACW+
Juncus longistylis	**rush,long-style**	**FACW**
Kochia scoparia	summer-cypress,Mexican	FAC
Lepidium perfoliatum	pepper-grass,clasping	FACU+
Linaria vulgaris	yellow toadflax	NL
Lupinus wyethii	Wyeht's lupine	NL
Lychnis alba	bladder campion	NL
Melilotus officinalis	sweetclover,yellow	FACU
Mentha arvensis	mint,field	FAC
Myriophyllum spp.	**milfoil species, water**	**NL**
Phleum pratense	timothy, common	FACU
Pinus contorta	pine,lodge-pole	FAC-
Plantago major	plantain,common	FAC+
Poa palustris	**bluegrass,fowl**	**FAC**
Poa pratensis	bluegrass,Kentucky	FACU+
Polemonium acutiflorum	Jacob's-ladder,sticky tall	NI
Polygonum amphibium	smartweed,water	OBL
*Populus trichocarpa**	black cottonwood	FAC
Potamogeton filiformis	pondweed,fine-leaf	OBL
Potentilla anserina	silverweed	OBL
Potentilla fruticosa	cinquefoil,shrubby	FAC-
Ratibida columnifera	coneflower, prairie	NL
Rumex crispus	dock,curly	FACW
Salix exigua	willow,sandbar	OBL
Salix lasiandra	**willow, Pacific**	**FACW+**
Salix lemmonii	willow, Lemmon's	FACW+
Scirpus acutus	bulrush,hard-stem	OBL

[1]Region 9 (Northwest) (Reed 1988).
New species identified in 2011 are shown in bold type.
*Commonly accepted name not included on 1988 list.

Table 1 (Continued). Vegetation species observed from 2008 to 2011 at the Sportsman's Campground Wetland Mitigation Site.

Scientific Names	Common Names	Region 9 Indicator Status[1]
Scirpus microcarpus	bulrush,small-fruit	OBL
Silene vulgaris	**maidenstears**	**NL**
Sisymbrium altissimum	mustard,tall tumble	FACU-
Solidago canadensis	**golden-rod,Canada**	**FACU**
Spiranthes romanzoffiana	ladies'-tresses,hooded	OBL
Sporobolus airoides	**sacaton,alkali**	**FAC-**
Stachys palustris	**hedgenettle,marsh**	**FACW+**
Taraxacum officinale	dandelion,common	FACU
Thlaspi arvense	penny-cress,field	NI
Tragopogon dubius	yellow salsify	NL
Trifolium hybridum	**clover,alsike**	**FACU+**
Trifolium pratense	clover,red	FACU
Trifolium repens	clover,white	FACU+
Triglochin maritimum	arrow-grass,seaside	OBL
Typha latifolia	cattail,broad-leaf	OBL

[1]Region 9 (Northwest) (Reed 1988).
New species identified in 2011 are shown in bold type.

Upland community Type 2 – *Artemisia tridentata*/*Agropyron* spp. was identified in the upland islands and on the north and south edges of the project. The cover was herbaceous and dominated by big sage (*Artemisia tridentata*), thickspike wheatgrass (*Agropyron dasystachyum*), blue bunch wheatgrass (*Agropyron spicatum*), slender wheatgrass (*Agropyron trachycaulum*), and Kentucky bluegrass (*Poa pratensis*). The percentage of bare ground was higher near the north and northwest property boundaries. The vegetation cover on the upland islands increased in 2011.

Wetland community Type 3 – *Eleocharis palustris* (creeping spike rush) characterized a majority of the site with large stands of creeping spikerush interspersed within areas of open water. The entire site except for the upland buffer, upland islands, and Communities 4, 5, and 7 was inundated during the August 4, 2011, site review. The dominant vegetation species were creeping spikerush, broad leaf cattail (*Typha latifolia*), and Lemmon's willow (*Salix lemmonii*). Open water 1 to 2 feet deep extended across 11 to 20 percent of the community. Bare ground encompassed 1 to 5 percent of total cover. The 2011 aerial photograph shot on August 17, 2011, shows that the water levels in Community 3 decreased after the site visit.

Wetland community Type 4 – *Salix* spp. dominated by woody species was identified in the wetland fringe of several open water areas and in the well-developed wetland in the north central portion of the site. Lemmon's willow, sandbar willow (*Salix exigua*), Pacific willow (*Salix lasiandra*), creeping spikerush, and beaked sedge were the predominant species.

Wetland community Type 5 – *Eleocharis palustris*/*Hordeum jubatum* formed in the wetland areas located at the edge of the inundated cells and upland islands, and adjacent to Type 4. The species composition was dominated by creeping spikerush, foxtail barley, redtop, tufted hairgrass, common timothy (*Phleum pratense*), and Kentucky bluegrass. The extent of Community 5 decreased from 2010 to 2011 and reflected the increased water levels observed in 2011. The cover of foxtail barley decreased and the cover of creeping spikerush increased, a progression of the vegetation from the early succession foxtail barley to the more permanent creeping spikerush. Portions of Community 5 were saturated to the ground surface.

Wetland community Type 7 – *Populus trichocarpa*/*Salix* spp. located on an island near the center of the site was dominated by woody species including Lemmon's willow, black cottonwood (*Populus trichocarpa*), Pacific willow, sandbar willow, creeping spikerush, short beaked sedge, lodgepole pine, and beaked sedge. Access to the island was limited by deep water during the 2011 investigation.

The pre-existing, open water area (Type 8 – Aquatic Macrophytes) located on the north boundary was classified as an aquatic bed community in 2011 generally defined as a wetland vegetation class dominated by plants "that grow principally on or below the surface of the water for most of the growing season in almost all years (Cowardin et al. 1979)." The Montana Natural Heritage Program (MTNHP) website further defines the Palustrine Aquatic Bed Class (PAB) as having aquatic plants at greater than 30 percent cover and water depths of greater than 0.5 m (and less than 2 meters) (MTNHP 2011). The community encompassed at least 30 percent cover of aquatic macrophytes consisting of *Myriophyllum* spp. (water milfoil species). Green algae (protist kingdom) were also observed on the water surface. The water levels in the pond ranged from three to four feet deep in early August 2011.

Trends in plant species composition were measured on three transects (T-1, T-2, and T-3) from 2008 to 2011. Transect 1 was established south to north in the west half of the mitigation area (Figure 2, Appendix A). The transect intercepted upland Type 2- *Artemisia tridentata*/*Agropyron* spp., wetland Type 3 – *Eleocharis palustris*, and wetland Type 5 – *Eleocharis palustris/Hordeum jubatum* (Table 2; Charts 1 and 2). Transect results are detailed on the Mitigation Monitoring Form (Appendix B). Photographs of the Transect 1 end points are shown on pages C-5 and C-6 of Appendix C. Hydrophytic species dominated 68.3 percent of the transect in 2011, up from 59.3 percent in 2010. The interval length of wetland Community 3 increased from 116 feet to 260 feet while the length of Community 5 decreased from 116 feet to 7 feet, reflecting the decrease in the cover of *Hordeum jubatum*.

Table 2. Data summary for Transect 1 from 2008 to 2011 at the Sportsman's Campground Mitigation Site.

Monitoring Year	2008	2009	2010	2011
Transect Length (feet)	391	391	391	391
Vegetation Community Transitions along Transect	4	3	3	3
Vegetation Communities along Transect	4	3	3	3
Hydrophytic Vegetation Communities along Transect	1	2	2	2
Total Vegetative Species	14	15	32	22
Total Hydrophytic Species	5	6	14	13
Total Upland Species	9	9	18	9
Estimated % Total Vegetative Cover	50	65	65	70
% Transect Length Comprising Hydrophytic Vegetation Communities	34	69.3	59.3	68.3
% Transect Length Comprising Upland Vegetation Communities	37	37	40.7	31.7
% Transect Length Comprising Unvegetated Open Water	0	0	0.0	0.0
% Transect Length Comprising Bare Substrate	29	0	0.0	0.0

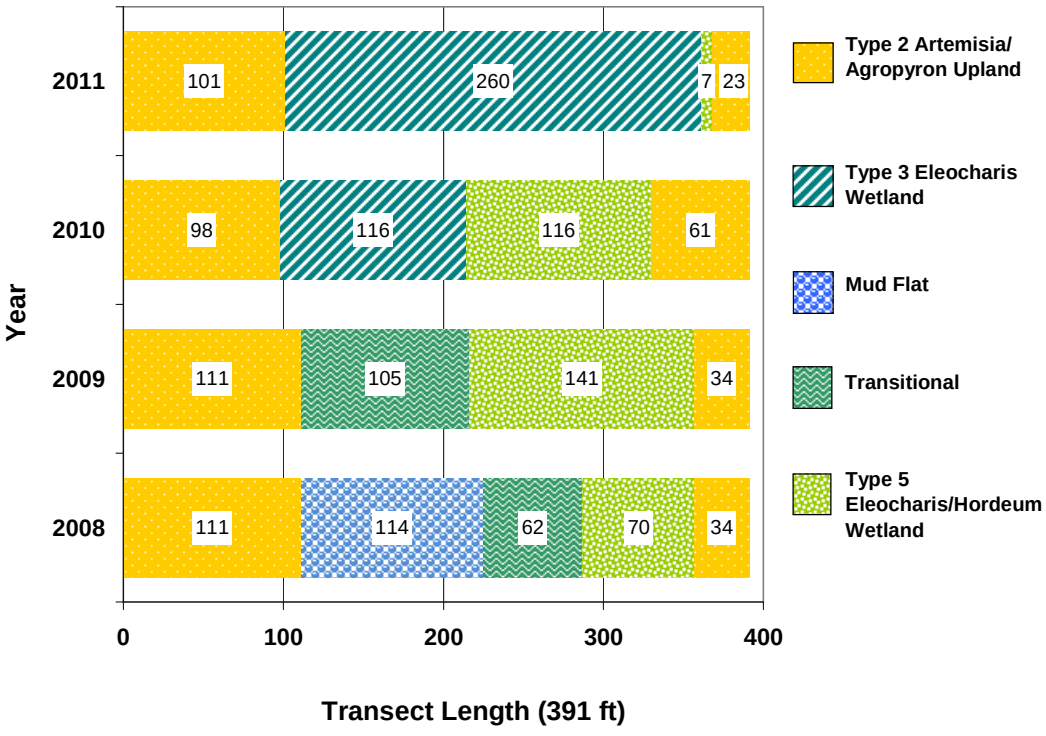

Chart 1. Transect maps showing vegetation types on Transect 1 from start (0 feet) to end (391 feet) from 2008 to 2011.

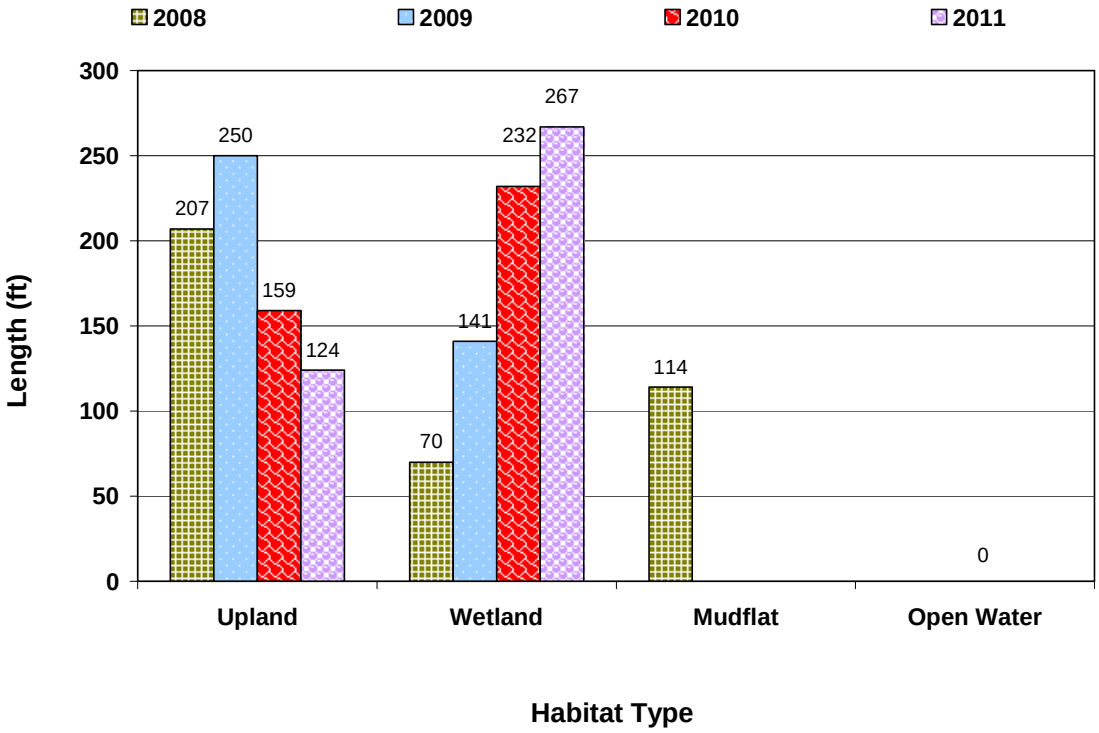

Chart 2. Length of habitat types within Transect 1 from 2008 to 2011.

Transect 2 was established south to north in the east half of the mitigation area (Figure 2, Appendix A). Access to portions of the interior transect intervals was restricted by deep water. The transect intersected Type 2 – Upland, Type 1 – Wetland, and Type 3 – Wetland. Approximately 95.5 percent of the transect encompassed hydrophytic vegetation communities, an increase of 29.7 percent from 2010. The extent of Community 5 on Transect 2 decreased in 2011, transitioning to Community 3. Transect details are summarized and graphed on Table 3 and Charts 3 and 4. Photographs of the Transect 2 end points are shown on page C-5 of Appendix C.

Transect 3 extends southwest to northeast near the center of the mitigation area. Access to the entire length of the transect and Community 7 was restricted by deep water. Transect 3 intercepted communities Type 2 – Upland, Type 5 – Wetland, Type 3 – Wetland, and Type 7 – Wetland. Approximately 83 percent of the transect encompassed hydrophytic plant communities, an increase of 4 percent from 2010. The transect intervals reflected a transition from Community 5 to Community 3 in 2011. Transect details are shown on Table 4 and Charts 5 and 6 (Monitoring Forms, Appendix B). Photographs of the Transect 3 end points are shown on page C-7 of Appendix C.

Table 3. Data summary for Transect 2 from 2008 to 2011 at the Sportsman's Campground Mitigation Site.

Monitoring Year	2008	2009	2010	2011
Transect Length (feet)	**400**	**400**	**400**	**400**
Vegetation Community Transitions along Transect	3	3	5	4
Vegetation Communities along Transect	3	3	3	3
Hydrophytic Vegetation Communities along Transect	2	2	2	2
Total Vegetative Species	14	15	25	27
Total Hydrophytic Species	9	10	19	19
Total Upland Species	5	5	6	8
Estimated % Total Vegetative Cover	30	45	50	60
% Transect Length Comprising Hydrophytic Vegetation Communities	56	56	65.8	95.5
% Transect Length Comprising Upland Vegetation Communities	2	2	2.3	4.5
% Transect Length Comprising Unvegetated Open Water	42	42	32.0	0.0
% Transect Length Comprising Bare Substrate	0	0	0.0	0.0

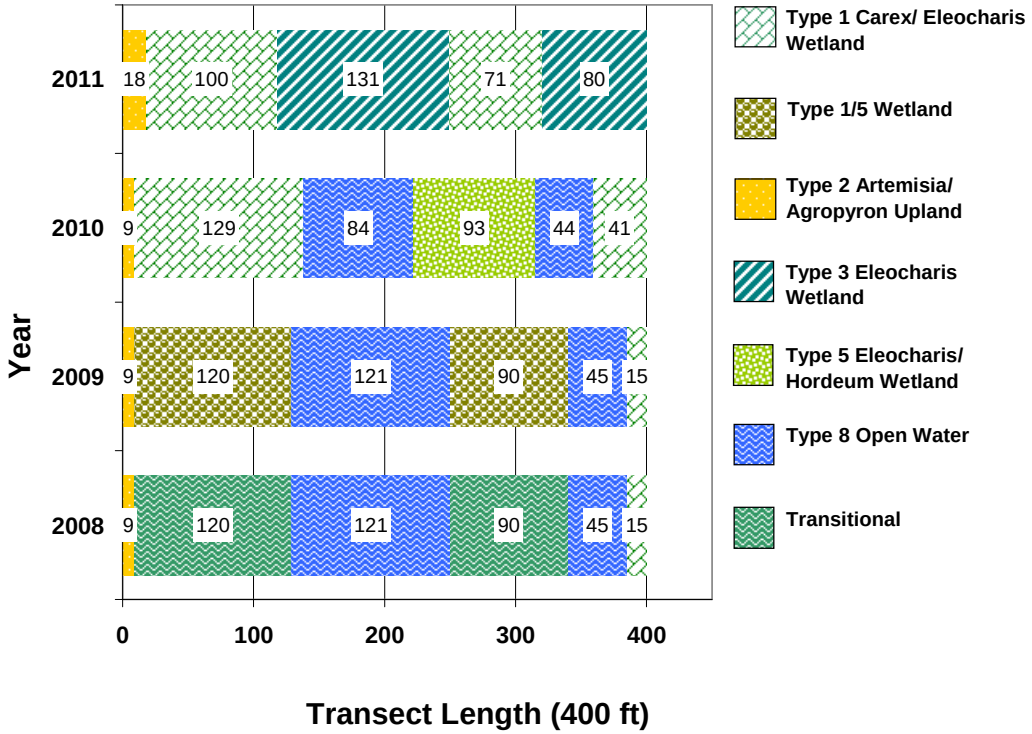

Chart 3: Transect maps showing vegetation types from 2008 to 2011 on Transect 2 from start (0 feet) to end (400 feet).

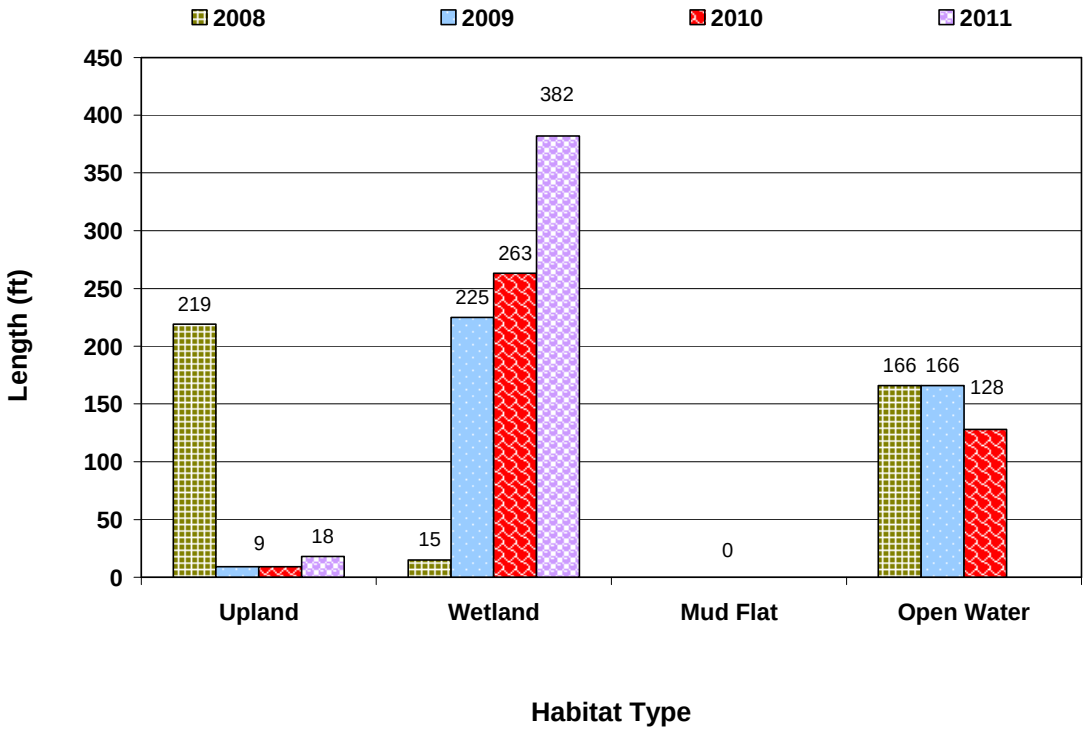

Chart 4. Length of habitat types within Transect 2 from 2008 to 2011.

Table 4. Data summary for Transect 3 from 2008 to 2011 at the Sportsman's Campground Mitigation Site.

Monitoring Year	2008	2009	2010	2011
Transect Length (feet)	377	377	377	377
Vegetation Community Transitions along Transect	7	7	4	6
Vegetation Communities along Transect	6	5	3	4
Hydrophytic Vegetation Communities along Transect	4	4	2	3
Total Vegetative Species	21	21	32	26
Total Hydrophytic Species	15	15	18	14
Total Upland Species	6	6	14	12
Estimated % Total Vegetative Cover	50	65	65	65
% Transect Length Comprising Hydrophytic Vegetation Communities	69	77	79	83
% Transect Length Comprising Upland Vegetation Communities	23	23	21	17
% Transect Length Comprising Unvegetated Open Water	0	0	0	0
% Transect Length Comprising Bare Substrate	8	0	0	0

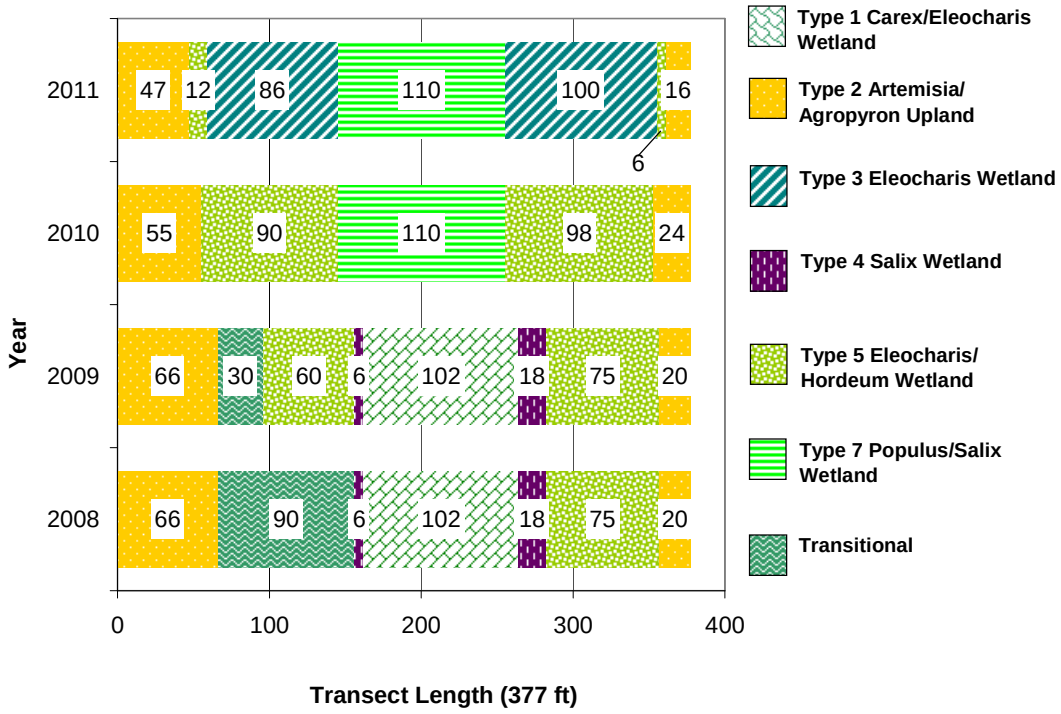

Chart 5. Transect maps showing vegetation types on Transect 3 from start (0 feet) to end (377 feet) from 2008 to 2011.

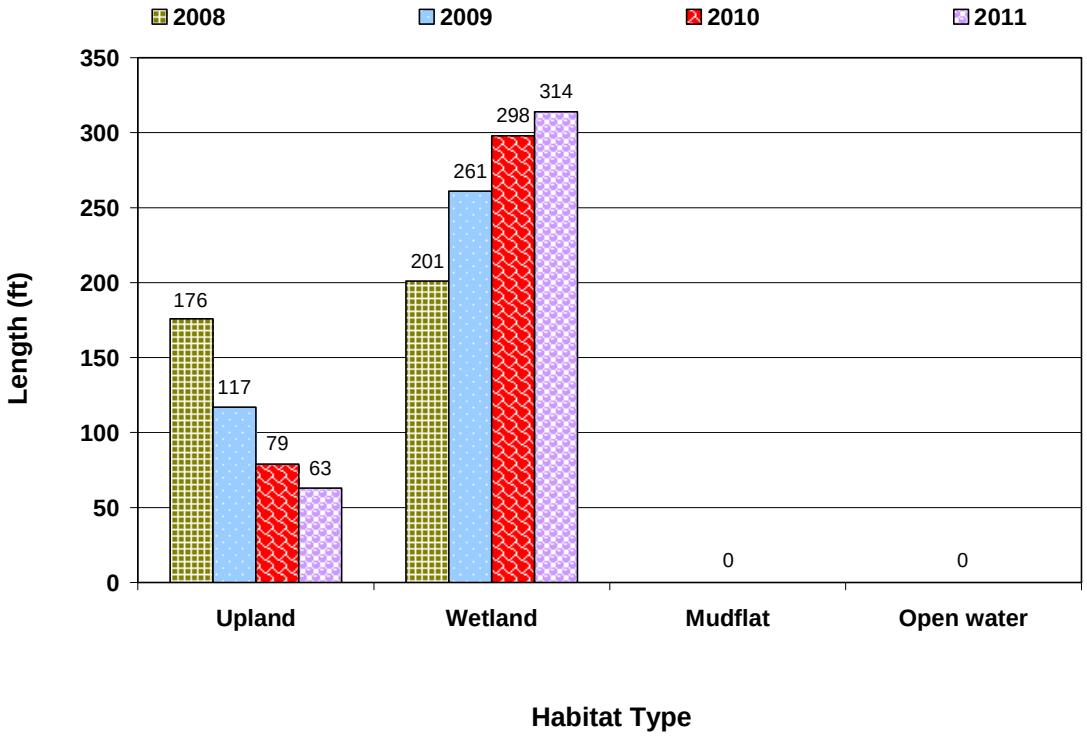

Chart 6. Length of habitat types within Transect 3 from 2008 to 2011.

Three infestations of spotted knapweed (*Centaurea maculosa*) each encompassing less than 0.1 acre and consisting of less than 1.0 percent of total cover of the infestation, were identified near the south boundary during the 2011 investigation (Figure 3, Appendix A). Five infestations of Canada thistle (*Cirsium arvense*) located near the north and east boundaries were recorded in 2011. The areal extent was less than 0.1 acre and the percent cover was trace (less than 1 percent) to moderate (5 to 25 percent). Both invasive species are classified as Category 2B noxious weeds. The spotted knapweed infestations were sprayed by MDT in 2011 after the site evaluation.

3.3. Soil

Soils on the project site were mapped before mitigation construction as Gravel Pit and Maurice loam, 2 to 8 percent slope (USDA 2010). Maurice series soils are deep, well-drained soils formed in alluvium or outwash. These non hydric soils are classified as a loamy-skeletal, mixed, superactive Ustic Haplocryolls. A thin layer of salvaged topsoil was placed across most of the project area following construction. Other areas received no topsoil treatment in order to promote shorebird and willow/cottonwood habitat. The areas identified on previous monitoring reports as "C G" represented areas of unvegetated cobble and gravel with no topsoil treatment. These areas were inundated during the August 2011 investigation and supported willow regeneration.

The soil in test pit Sprt-1 was a sandy loam (10 YR 4/1) with cobbles at 12 inches bgs. The low chroma provided a positive indication of a hydric soil. Sprt-2 revealed a sandy loam (10 YR 3/2) without redox features. The soil was considered problematic based on the relatively recent disturbance and site development. Wetland vegetation and wetland hydrology were present. The soil profile at Sprt-3 revealed a sandy loam (10 YR 3/2) without redox concentrations. The soil was considered problematic based on the recent development of the site. The criteria for wetland vegetation and hydrology were met. The test pit soils did not generally confirm the mapped soil unit.

3.4. Wetland Delineation

The 2008 MDT Monitoring Report delineated 0.66 acres of wetland and 1.31 acres of open water that developed within the monitoring boundaries prior to the mitigation construction. The USACE agreed to provide credit to the MDT for the pre-existing wetlands.

The 2011 wetland delineation identified 15.31 acres of wetland created since 2007 (Table 5) and 1.97 acres of pre-existing wetland for a total wetland and aquatic habitat of 17.28 acres. The open water area constructed prior to 2007, Community 8, was reclassified as an aquatic bed wetland community in 2011. The upland buffer and islands encompassed 6.74 acres in 2011. The unvegetated cobble and gravel areas identified in previous years were inundated on August 4, 2011, and included in Community 3. The areas had become exposed by the August 17, 2011, aerial photography date as shown on Figures 2 and 3 (Appendix A). The 2010 total acreage for created wetland should have

been reported as 9.77 acres rather than 11.74 acres. The total for creation inadvertently included the pre-existing wetlands. The 2010 figures are reported accurately in Table 5. The total wetland acreage increased by 1.34 acres from 2010 to 2011, the approximate area of the cobble/gravel bars noted in 2010 that were inundated during the 2011 investigation.

Table 5. Acreages for wetlands, open water, and landforms within the Sportsman's Campground Wetland Mitigation Site from 2008 to 2011.

Wetland and Open Water	2008	2009	2010	2011*
Pre-existing wetland	0.66	0.66	0.66	0.66
Created wetland	4.81	7.39	9.77	15.31
Pre-existing open water	1.31	1.31	1.31	1.31
Created open water	3.84	3.70	4.20	0.00
TOTAL	10.62	13.06	15.94	17.28
Landform	2008	2009	2010	2011
Transitional areas	3.48	2.46	NI	NI
Mudflat	0.85	0.00	NI	NI
Unvegetated cobble/gravel	1.23	1.06	1.17	NI
Upland	7.82	7.51	6.93	6.74

*NI – Not identified.

3.5. Wildlife

Eight bird species were observed in 2011 including the dark-eyed Junco (*Junco hyemalis*), killdeer (*Charadrius vociferous*), mallard (*Anas platyrhynchos*), osprey (*Pandion haliaetus*), red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), Western gull (*Larus occidentalis*), and Wilson's snipe (*Gallinago delicata*) (Table 6). Pronghorn antelope (*Antilocapra americana*), Richardson's ground squirrel (*Spermophilus richardsonii*), two unidentified frogs, and mule deer (*Odocoileus hemionus*) scat were also observed. The adjacent landowner observed the antelope.

Table 6. Wildlife species observed at the Sportsman's Campground Wetland Mitigation Site from 2008 to 2011.

COMMON NAMES	SCIENTIFIC NAMES
AMPHIBIAN	
Columbia Spotted Frog	*Rana luteiventris*
Frog spp	
BIRD	
American Wigeon	*Anas americana*
Belted Kingfisher	*Megaceryle alcyon*
Blue-winged Teal	*Anas discors*
Canada Goose	*Branta canadensis*
Cliff Swallow	*Petrochelidon pyrrhonota*
Common Nighthawk	*Chordeiles minor*
Dark-eyed Junco	***Junco hyemalis***
Gray Catbird	*Dumetella carolinensis*
Great Blue Heron	*Ardea herodias*
Killdeer	***Charadrius vociferus***
Mallard	***Anas platyrhynchos***
Mourning Dove	*Zenaida macroura*
Osprey	***Pandion haliaetus***
Red-tailed Hawk	***Buteo jamaicensis***
Red-winged Blackbird	***Agelaius phoeniceus***
Song Sparrow	*Melospiza melodia*
Sparrow Spp.	
Spotted Sandpiper	*Actitis macularius*
Western Gull	***Larus occidentalis***
Western Sandpiper	*Calidris mauri*
Wilson's Phalarope	*Phalaropus tricolor*
Wilson's Snipe	***Gallinago delicata***
MAMMAL	
Badger	*Taxidea taxus*
Deer Spp.	
Moose	*Alces americanus*
Mule Deer	***Odocoileus hemionus***
Muskrat	*Ondatra zibethicus*
Pronghorn antelope	*Antilocapra americana*
Raccoon	*Procyon lotor*
Richardson's Ground Squirrel	***Spermophilus richardsonii***
White-tailed Deer	*Odocoileus virginianus*

Species identified in 2011 are listed in bold type.

3.6. Functional Assessment

Though the assessment forms for the preconstruction evaluation are not available, MDT project files indicate that wetlands identified within the mitigation site boundaries prior to construction were rated as Category IV systems using the 1999 MDT Montana Wetland Assessment Method (MWAM) (Berglund 1999).

The 2008 through 2011 wetland functions and values were assessed using the 2008 Montana Wetland Assessment Method (Berglund and McEldowney 2008) (Wetland Assessment Form, Appendix B).

The 17.28-acre AA encompassed the constructed wetlands and pre-existing wetlands in 2011 (Table 7). The AA was rated as a Category II wetland with 74.44 percent of the possible total score, an increase of 8.9 percent over 2010. The 2011 functional points were higher for the Sediment/Nutrient/Toxicant Removal, Sediment/Shoreline Stabilization, and Uniqueness functions primarily the result of increases in wetland vegetation cover and water levels from 2010 to 2011. Ratings were high for General Wildlife Habitat, Short and Long Term Surface Water Storage, Sediment/Nutrient/Toxicant Removal, Production Export/Food Chain Support, Groundwater Discharge/Recharge, and Recreation/Education Potential.

Table 7. Summary of 2008 to 2011 wetland function/value ratings and functional points at the Sportsman's Campground Wetland Mitigation Site.

Function and Value Parameters from the 2008 MDT Montana Wetland Assessment Method	2008	2009	2010	2011
Listed/Proposed T&E Species Habitat	Low (0.00)	Low (0.00)	Low (0.00)	Low (0.0)
MTNHP Species Habitat	Low (0.10)	Low (0.10)	Low (0.20)	Low (0.2)
General Wildlife Habitat	High (0.90)	High (0.90)	High (0.90)	High (0.9)
General Fish Habitat	NA	NA	NA	NA
Flood Attenuation	NA	NA	NA	NA
Short and Long Term Surface Water Storage	High (0.90)	High (0.90)	High (1.00)	High (1.0)
Sediment/Nutrient/Toxicant Removal	Mod (0.70)	Mod (0.70)	Mod (0.70)	High (1.0)
Sediment/Shoreline Stabilization	NA	Low (0.30)	Mod (0.70)	High (1.0)
Production Export/Food Chain Support	High (0.80)	High (0.80)	High (0.80)	High (0.8)
Groundwater Discharge/Recharge	High (1.00)	High (1.00)	High (1.00)	High (1.0)
Uniqueness	Mod (0.40)	Mod (0.40)	Mod (0.40)	Mod (0.6)
Recreation/Education Potential (bonus points)	High (0.20)	High (0.20)	High (0.20)	High (0.2)
Actual Points / Possible Points	**5.0 / 8**	**5.3 / 9**	**5.9 / 9**	**6.7 / 9**
% of Possible Score Achieved	**63%**	**59%**	**65.56%**	**74.44%**
Overall Category	**II**	**II**	**II**	**II**
Total Acreage of Assessed Wetlands within Site Boundaries	**14.95**	**15.52**	**15.93**	**17.28**
Functional Units (acreage x actual points)	**74.8**	**82.25**	**93.99**	**115.78**

3.7. Photo Documentation

Photographs taken of photo points one through four (PP1 through PP4, Figure 2, Appendix A) from 2009 to 2011 are shown on pages C-1 through C-5 of Appendix C. Transect end points taken from 2009 to 2011 are shown on pages C-5 to C-7 of Appendix C and photos of data points Sprt-1 through Sprt-3 are included on pages C-8 of Appendix C.

3.8. Maintenance Needs

There are no man-made water level control features on this site. The project perimeter is fenced with standard barbed wire in good condition. Areas identified as unvegetated cobbles and gravel (C/G) were intentionally left open for the

purpose of providing shore bird nesting habitat (Figure 3, Appendix A). These areas were inundated on August 4, 2011, although they had become exposed by the flyover date of August 17, 2011.

Three infestations of spotted knapweed (*Centaurea maculosa*) each encompassing less than 0.1 acre and consisting of less than 1.0 percent of total cover of the infestation, were identified near the south boundary during the 2011 investigation (Figure 3, Appendix A). Five infestations of Canada thistle (*Cirsium arvense*) located near the north and east boundaries were recorded in 2011. Both invasive species are classified as Category 2B noxious weeds. The spotted knapweed infestations were sprayed by MDT in 2011 after the site evaluation.

3.9. Current Credit Summary

The USACE and MDT approved a credit ratio of 1:1 for created wetlands, open water, and pre-existing wetlands. Wetland impacts associated with the Sportsman's Campground – East and Dickie Bridge – Wise River MDT projects totaled 14.36 acres. The MDT anticipated that 15.6 acres of wetland would be created at this mitigation site to compensate for the highway construction impacts.

The Sportsman's Campground mitigation site currently encompasses 15.31 acres of created Class II wetland and 1.97 acres of pre-existing wetland developed prior to mitigation site construction (Table 8). The total of 17.28 acres of wetlands exceeds the projected goal of 15.6 acres. Success criteria were not established for this site. This project was developed prior to the adoption of the 2008 USACE mitigation guidelines.

Table 8. Estimated credit acres in 2011 for Sportsman's Campground Mitigation Site.

Wetland and Open Water	Credit Ratio	2010 Delineated Acres*	2010 Credit Acres*	2011 Delineated Acres	2011 Credit acres
Pre-existing wetland	1:1	0.66	0.66	0.66	0.66
Created wetland	1:1	9.77	9.77	15.31	15.31
Pre-existing open water	1:1	1.31	1.31	1.31	1.31
Created open water	1:1	4.20	4.20	0.00	0.00
TOTAL		15.94	15.94	17.28	17.28

*2010 total acres reported for created wetland included the pre-existing wetland acreage. The acreage should have been listed as 9.77 acres rather than 11.74 acres. The 2010 total wetland acreage was 15.94 acres rather than 17.91 acres.

*2010 total acres reported for created wetland included the pre-existing wetland acreage. The acreage should have been listed as 9.77 acres rather than 11.74 acres. The 2010 total wetland acreage was 15.94 acres rather than 17.91 acres.

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Appendix A

Figure 2 – Monitoring Activity Locations
Figure 3 – Mapped Site Features

MDT Wetland Mitigation Monitoring
Sportsman's Campground
Deer Lodge, Montana

Figure 2: 2011 Monitoring Activity Locations

N

0 125 250 500

Feet

T-1 Finish

T-1 Start

PP2

Sprt-3

PP1

Sprt-2

T-3 Start

T-3 Finish

PP3

T-2 Finish

Sprt-1

T-2 Start

PP4

State Route 43

Big Hole River

Legend

- Vegetation Transect
- Monitoring Limits
- Data Points
- Photo Points

Base Photography Date: August 17, 2011

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.

LOCATION: Deer Lodge Co., MT

PROJECT NO: STPP 46-5(12)51

FILE: Sportsmans/Monitor2011.mxd

Project Name: Sportsman's Campground Wetland Mitigation

Drawing Title: 2011 Monitoring Activity Locations

DRAWN	CHECKED	APPROVED
BV	BCS	JJ

SCALE: Noted

Drawn: August 8, 2011

PROJ MGR: B Sandefur

CONFLUENCE consulting incorporated

Figure 2

REV -

Figure 3: 2011 Mapped Site Features

N

0 125 250 500

Feet

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.

State Route 43

Big Hole River

Legend

Monitoring Limits

Wetland Limits

Vegetation Communities

Base Photography Date: August 17, 2011

Noxious Weeds

Centaurea maculosa

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 Carex spp/Eleocharis palustris
2 Artemisia tridentata/Agropyron spp.
3 Eleocharis palustris
4 Salix spp.
5 Eleocharis palustris/Hordeum jubatum
7 Populus trichocarpa/Salix spp.
8 Aquatic macrophytes

Acreages

Project Area	24.02 acres
Wetlands	17.28 acres
Upland Buffer	6.01 acres
Upland Islands	0.73 acres

LOCATION: Deer Lodge Co., MT

PROJECT NO: STPP 46-5(12)51

FILE: Sportsmans/Veg2011.mxd

Project Name: Sportsmans Campground Wetland Mitigation

Drawing Title: 2011 Mapped Site Features

DRAWN BV | CHECKED BCS | APPROVED JJ

SCALE: Noted

Drawn: August 8, 2011

PROJ MGR: B Sandefur

CONFLUENCE consulting incorporated

Figure 3

REV -

Appendix B

2011 MDT Wetland Mitigation Site Monitoring Form
2011 Wetland Determination Data Form – Routine Wetland Delineation, 1987 COE Protocol
2011 MDT Montana Wetland Assessment Form

MDT Wetland Mitigation Monitoring
Sportsman's Campground
Deer Lodge, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Sportsman's Campground Assessment Date/Time 8/4/2011 7:58:00 AM

Person(s) conducting the assessment: B. Vaughn, L. Soderquist

Weather: clear, sunny, warm-85 deg F Location: 13 miles west of Wise River on Hwy 43

MDT District: Butte Milepost: NA

Legal Description: T 2N R 13W Section(s) 35

Initial Evaluation Date: 8/7/2008 Monitoring Year: 4 #Visits in Year: 1

Size of Evaluation Area: 24 (acres)

Land use surrounding wetland:

Rangeland, State Route 43, Big Hole River

HYDROLOGY

Surface Water Source: Groundwater, precipitation

Inundation: ☑ Average Depth: 1 **(ft)** Range of Depths: 0.1-4.0 **(ft)**

Percent of assessment area under inundation: 70 %

Depth at emergent vegetation-open water boundary: 0.8 **(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**:**

high groundwater table (free water in pit)

Groundwater Monitoring Wells

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

Additional Activities Checklist:

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

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

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

Hydrology Notes:

Entire site much wetter than in 2010. All excavated cells inundated. Areas of inundation throughout Comm. 1 in east half of site.

VEGETATION COMMUNITIES

Site Sportsman's Campground

(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:** Carex spp. / Eleocharis palustris **Acres:** 4.22

Species	Cover class	Species	Cover class
Agropyron repens	1	Agrostis alba	3
Algae, green	2	Alopecurus pratensis	2
Aster chilensis	0	Beckmannia syzigachne	2
Bidens cernua	0	Carex aquatilis	1
Carex athrostachya	2	Carex nebrascensis	2
Carex utriculata*	3	Carex vesicaria	0
Cicuta douglasii	0	Deschampsia cespitosa	3
Eleocharis palustris	4	Geum macrophyllum	0
Glyceria elata	2	Hordeum jubatum	2
Juncus articulatus	1	Juncus balticus	1
Juncus bufonius	0	Juncus effusus	2
Juncus longistylis	0	Mentha arvensis	1
Polygonum amphibium	1	Potentilla anserina	0
Rumex crispus	2	Salix exigua	1
Salix lasiandra	1	Salix lemmonii	2
Scirpus acutus	0	Stachys palustris	0
Trifolium repens	0	Triglochin maritimum	1
Typha latifolia	0		

Comments:

Combined 2010 Comms. 3, 5, and 6 into Comm. 1 in 2011. Cover of hordeum jubatum decreased and species diversity increased across the community. Less than 10 percent bare ground noted. Inundation levels from 2 to 12 inches. Ponds throughout w/ 2 to 4 inches surface water.

Community # 2 **Community Type:** Artemisia tridentata / Agropyron spp. **Acres:** 6.93

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agoseris aurantiaca	0
Agropyron dasystachyum	3	Agropyron repens	2
Agropyron spicatum	2	Agropyron trachycaulum	2
Agrostis alba	2	Alopecurus pratensis	1
Artemisia tridentata	3	Bare ground	2
Bromus tectorum	1	Carex microptera	0
Carex praegracilis	0	Centaurea maculosa	0
Cerastium arvense	0	Cirsium arvense	0
Cirsium vulgare	0	Epilobium angustifolium	0
Equisetum hyemale	1	Festuca pratensis	1
Glycyrrhiza lepidota	0	Hordeum brachyantherum	1
Hordeum jubatum	2	Lupinus wyethii	1
Lychnis alba	0	Phleum pratense	2
Pinus contorta	0	Poa pratensis	3
Potentilla fruticosa	2	Silene vulgaris	0
Solidago canadensis	1	Sporobolus airoides	2
Trifolium hybridum	2		

Comments:

Upland perimeter. Percentage of bare ground higher on north property boundary. Up to 50% bare ground on northwest property corner. Vegetation cover increased on upland islands in 2011.

Community # 3 **Community Type:** Eleocharis palustris / **Acres:** 9.65

Species	Cover class	Species	Cover class
Bare ground	1	Beckmannia syzigachne	1
Carex utriculata*	1	Eleocharis palustris	5
Juncus compressus	0	Open water	3
Rumex crispus	1	Salix lemmonii	2
Typha latifolia	3		

Comments:

Dominated by Eleo pal and open water 1 to 2 feet deep. Inundation levels increased notably in constructed cells in 2011.

Community # 4 **Community Type:** Salix spp. / **Acres:** 1.36

Species	Cover class	Species	Cover class
Agrostis alba	2	Alopecurus pratensis	0
Beckmannia syzigachne	1	Carex athrostachya	1
Carex utriculata*	3	Eleocharis palustris	3
Pinus contorta	1	Poa pratensis	1
Salix exigua	1	Salix lasiandra	3
Salix lemmonii	5	Silene vulgaris	1
Typha latifolia	1		

Comments:

Majority of Comm. 4 inundated w/ 2 to 12 inches of water.

Community # 5 **Community Type:** Eleocharis palustris / Hordeum jubatum **Acres:** 0.567

Species	Cover class	Species	Cover class
Agropyron repens	1	Agropyron trachycaulum	0
Agrostis alba	2	Alopecurus pratensis	1
Beckmannia syzigachne	1	Bromus tectorum	1
Carex athrostachya	0	Carex utriculata*	1
Deschampsia cespitosa	2	Eleocharis palustris	3
Epilobium angustifolium	0	Festuca pratensis	1
Hordeum brachyantherum	1	Hordeum jubatum	3
Juncus effusus	0	Melilotus officinalis	1
Phleum pratense	2	Poa pratensis	2
Rumex crispus	0	Thlaspi arvense	0

Comments:

Extent of comm. 5 decreased in 2011. Portions of community transitioned to Comm 3 as a result of increased water levels in 2011. Majority of Comm. 5 saturated to ground surface. Extent of Hordeum decreased in island perimeters.

Community # 7 **Community Type:** Populus trichocarpa* / Salix spp. **Acres:** 0.355

Species	Cover class	Species	Cover class
Agrostis alba	1	Beckmannia syzigachne	1
Carex athrostachya	2	Carex utriculata*	2
Deschampsia cespitosa	1	Eleocharis palustris	2
Pinus contorta	2	Populus trichocarpa*	3
Salix exigua	2	Salix lasiandra	3
Salix lemmonii	4		

Comments:

Access to island (Comm. 7) difficult as a result of deep water.

Community # 8 **Community Type:** Aquatic Macrophytes / **Acres:** 0.948

Species	Cover class	Species	Cover class
Algae, green	2	Myriophyllum spp.	3

Comments:

Encompasses pre-existing wetland cell on northcentral bndry. Water levels deeper (3-4 ft) in 2011.

Total Vegetation Community Acreage **24.03**

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

VEGETATION TRANSECTS

Site: Sportsman's Campground Date: 8/4/2011 7:58:00 AM

Transect Number: 1 **Compass Direction from Start:** 0

Interval Data:

Ending Station 101 **Community Type:** Artemisia tridentata / Agropyron spp.

Species	Cover class	Species	Cover class
Agropyron dasystachyum	1	Agropyron spicatum	2
Agropyron trachycaulum	4	Artemisia tridentata	2
Bare ground	3	Festuca pratensis	2
Hordeum jubatum	3	Poa pratensis	3
Rumex crispus	0	Trifolium hybridum	2

Ending Station 361 **Community Type:** Eleocharis palustris /

Species	Cover class	Species	Cover class
Beckmannia syzigachne	0	Carex utriculata*	0
Eleocharis palustris	4	Open water	3
Salix lemmonii	0	Typha latifolia	1

Ending Station 368 **Community Type:** Eleocharis palustris / Hordeum jubatum

Species	Cover class	Species	Cover class
Agropyron repens	0	Agrostis alba	1
Alopecurus pratensis	1	Carex athrostachya	2
Deschampsia cespitosa	3	Festuca pratensis	1
Hordeum jubatum	4	Melilotus officinalis	1

Ending Station 391 **Community Type:** Artemisia tridentata / Agropyron spp.

Species	Cover class	Species	Cover class
Achillea millefolium	0	Artemisia tridentata	3
Aster chilensis	1	Bare ground	3
Deschampsia cespitosa	1	Festuca pratensis	1
Hordeum jubatum	1		

Transect Notes:

Transect Number: 2 **Compass Direction from Start:** 0

Interval Data:

Ending Station 18 **Community Type:** Artemisia tridentata / Agropyron spp.

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agropyron spicatum	1
Agropyron trachycaulum	2	Agrostis alba	1
Artemisia tridentata	2	Aster chilensis	0
Carex microptera	1	Equisetum hyemale	1
Festuca pratensis	2	Glycyrrhiza lepidota	0
Phleum pratense	1	Poa pratensis	3
Potentilla fruticosa	1		

Ending Station 118 **Community Type:** Carex spp. / Eleocharis palustris

Species	Cover class	Species	Cover class
Alopecurus pratensis	1	Beckmannia syzigachne	1
Bidens cernua	0	Carex aquatilis	2
Carex nebrascensis	1	Carex utriculata*	3
Eleocharis palustris	4	Juncus effusus	0
Poa palustris	0	Stachys palustris	0

Ending Station 249 **Community Type:** Eleocharis palustris /

Species	Cover class	Species	Cover class
Eleocharis palustris	4	Open water	4
Salix lemmonii	1	Typha latifolia	1

Ending Station 320 **Community Type:** Carex spp. / Eleocharis palustris

Species	Cover class	Species	Cover class
Algae, green	1	Beckmannia syzigachne	1
Carex utriculata*	1	Eleocharis palustris	5
Salix exigua	0	Salix lemmonii	0

Ending Station 400 **Community Type:** Eleocharis palustris /

Species	Cover class	Species	Cover class
Alopecurus pratensis	0	Beckmannia syzigachne	1
Eleocharis palustris	4	Open water	5
Salix lemmonii	2	Typha latifolia	1

Transect Notes:

Access difficult as a result of deep water.

Transect Number: 3 **Compass Direction from Start:** 35

Interval Data:

Ending Station 47 **Community Type:** Artemisia tridentata / Agropyron spp.

Species	Cover class	Species	Cover class
Agropyron spicatum	0	Agropyron trachycaulum	1
Artemisia tridentata	2	Bare ground	4
Centaurea maculosa	0	Deschampsia cespitosa	0
Hordeum jubatum	2	Phleum pratense	2
Poa pratensis	3	Trifolium repens	1

Ending Station 59 **Community Type:** Eleocharis palustris / Hordeum jubatum

Species	Cover class	Species	Cover class
Agrostis alba	2	Beckmannia syzigachne	1
Deschampsia cespitosa	4	Eleocharis palustris	2
Hordeum brachyantherum	0	Hordeum jubatum	3
Rumex crispus	1		

Ending Station 145 **Community Type:** Eleocharis palustris /

Species	Cover class	Species	Cover class
Algae, green	1	Beckmannia syzigachne	2
Eleocharis palustris	4	Open water	3
Salix lemmonii	2	Typha latifolia	2

Ending Station 255 **Community Type:** Populus trichocarpa* / Salix spp.

Species	Cover class	Species	Cover class
Agrostis alba	2	Carex athrostachya	0
Deschampsia cespitosa	1	Pinus contorta	2
Populus trichocarpa*	3	Salix exigua	3
Salix lemmonii	4		

Ending Station 355 **Community Type:** Eleocharis palustris /

Species	Cover class	Species	Cover class
Agrostis alba	0	Beckmannia syzigachne	1
Carex aquatilis	2	Deschampsia cespitosa	1
Eleocharis palustris	3	Open water	3
Salix lemmonii	2		

Ending Station 361 **Community Type:** Eleocharis palustris / Hordeum jubatum

Species	Cover class	Species	Cover class
Agrostis alba	3	Eleocharis palustris	1
Festuca pratensis	1	Hordeum jubatum	2
Phleum pratense	2	Poa pratensis	1
Trifolium hybridum	2		

Ending Station 377 **Community Type:** Artemisia tridentata / Agropyron spp.

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agropyron repens	0
Agropyron trachycaulum	1	Agrostis alba	1
Artemisia tridentata	0	Bare ground	4
Deschampsia cespitosa	0	Festuca pratensis	1
Phleum pratense	1	Pinus contorta	1
Poa pratensis	2	Trifolium hybridum	1

Transect Notes:

PLANTED WOODY VEGETATION SURVIVAL

Sportsman's Campground

Planting Type	#Planted	#Alive	Notes
			no woody species planted

Comments

Abundant volunteer woodies present within mitigation site.

Sportsman's Campground

WILDLIFE

Birds

Were man-made nesting structures installed? Yes

If yes, type of structure: Bluebird boxes

How many? 4

Are the nesting structures being used? No

Do the nesting structures need repairs? No

Nesting Structure Comments:

Species	#Observed	Behavior	Habitat
Dark-eyed Junco	1	F, FO	MA
Killdeer	5	F, L	MF, OW
Mallard	3	F, FO, L	MA, OW, WM
Osprey	1	FO	AB, MA
Red-tailed Hawk	1	FO	WM
Red-winged Blackbird	6	F, FO, L, N	MA, MF, OW, WM
Western Gull	1	FO	MA, OW, WM
Wilson's Snipe	1	FO, L	MA, MF, OW, WM

Bird Comments

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
Frog spp	2	No	No	No	
Mule Deer		No	Yes	No	
Pronghorn antelope	1	No	No	No	adj.landowner observed
Richardson's Ground Squirrel	1	No	No	Yes	

Wildlife Comments:

Many 0.5 inch diameter frogs.

Sportsman's Campground

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
1178-1179	45.885948	-113.151268	270	PP4
1180-1182	45.886951	-113.154488	270	PP3
1183	45.885178	-113.153091	0	T2 start
1184	45.885986	-113.153099	225	SPRT-1
1185	45.885849	-113.15699	35	T3 start
1186	45.885864	-113.156845	45	SPRT-2
1187	45.885914	-113.157928	0	T1 start
1189	45.886875	-113.157982	180	T1 end
1190	0	0	215	T3 end
1193-1194	45.886494	-113.159973	90	PP2:
1195	45.886471	-113.15992	90	SPRT-3
1197-1198	45.885929	-113.157097	90	PP1

Comments:

Sportsman's Campground

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? Yes

If yes, do they need to be repaired? No

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.

No control structures.

WETLAND DETERMINATION DATA FORM – Routine Weltand Delineation, 1987 COE Protocol

Project/Site: Sportsman's Campground City/County: Deer Lodge Sampling Date: 8/4/2011

Applicant/Owner: MDT State: MT Sampling Point: SPRT-1

Investigator(s): B. Vaughn, L. Soderquist Section, Township, Range: S 36 T 2N R 13W

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

Subregion (LRR): LRR E Lat: 45.8860166666667 Long: -113.15314 Datum: WGS84

Soil Map Unit Name: Reclaimed Gravel Pit

Do Normal Circumstances Exist on this site? Yes ☐

Is the site significantly disturbed (Atypical Situation)? Yes ☑

Is the area a potential Problem Area? Yes ☐

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:
Comm 1 at edge near open water.

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: 5)			
1. Eleocharis palustris	65	☑	OBL
2. Carex aquatilis	20	☑	OBL
3. Alopecurus pratensis	10	☐	FACW
4. Rumex crispus	1	☐	FACW
5. Beckmannia syzigachne	1	☐	OBL
6. Algae-green	5	☐	NO
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
	102 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

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)

Dominance Test is >50% ☑

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: SPRT-1

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 4/1	100					Sandy Loam	Cobbles at 12"

[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:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☑ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Soils List
- ☐ Listed on National Soils List
- ☐ Other (explain in remarks)

Taxonomy Subgroup: ustic Haplocryolls

Confirm Mapped Type?: ☐

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Site constructed four years ago. Soils disturbed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators

- ☐ Innundated
- ☑ Saturated in upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage patterns in wetlands

Secondary Indicators (2 or more required)

- ☐ Oxidized Rhizospheres along Living Roots
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	Yes ☐	No ☑	Depth (inches):
Water Table Present?	Yes ☑	No ☐	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ☑	No ☐	Depth (inches): 0

Wetland Hydrology Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Routine Weltand Delineation, 1987 COE Protocol

Project/Site: Sportsman's Campground City/County: Deer Lodge Sampling Date: 8/4/2011

Applicant/Owner: MDT State: MT Sampling Point: SPRT-2

Investigator(s): B. Vaughn, L. Soderquist Section, Township, Range: S 36 T 2N R 13W

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

Subregion (LRR): LRR E Lat: 45.885914 Long: -113.15314 Datum: WGS 84

Soil Map Unit Name: Reclaimed gravel pit

Do Normal Circumstances Exist on this site? Yes ☐

Is the site significantly disturbed (Atypical Situation)? Yes ☑

Is the area a potential Problem Area? Yes ☑

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:
Recently constructed wetland cell. Data point located in Comm. 5 in transition area between 5 and 3.

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: 5 ft)			
1. Eleocharis palustris	20	☑	OBL
2. Deschampsia cespitosa	30	☑	FACW
3. Beckmannia syzigachne	20	☑	OBL
4. Hordeum brachyantherum	10	☐	FACW
5. Juncus effusus	5	☐	FACW+
6. Rumex crispus	5	☐	FACW
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
	90 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

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)

Dominance Test is >50% ☑

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: SPRT-2

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 3/2	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:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Soils List
- ☐ Listed on National Soils List
- ☑ Other (explain in remarks)

Taxonomy Subgroup: Ustic Haplocryolls

Confirm Mapped Type?: ☐

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Chroma of 2 but no redox features. Problem area. Cell constructed approx. 4 years ago.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators

- ☐ Innundated
- ☑ Saturated in upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage patterns in wetlands

Secondary Indicators (2 or more required)

- ☐ Oxidized Rhizospheres along Living Roots
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

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): 12

Wetland Hydrology Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Routine Weltand Delineation, 1987 COE Protocol

Project/Site: Sportsman's Campground City/County: Deer Lodge Sampling Date: 8/4/2011

Applicant/Owner: MDT State: MT Sampling Point: SPRT-3

Investigator(s): B. Vaughn, L. Soderquist Section, Township, Range: S 36 T 2N R 13W

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

Subregion (LRR): LRR E Lat: 45.8868283333333 Long: -113.15981 Datum: WGS 84

Soil Map Unit Name: Reclaimed gravel pit

Do Normal Circumstances Exist on this site? Yes ☐

Is the site significantly disturbed (Atypical Situation)? Yes ☑

Is the area a potential Problem Area? Yes ☑

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:
Located in Comm 5 at base of slope at west edge of west cell.

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: 5 ft)			
1. Eleocharis palustris	35	☑	OBL
2. Deschampsia cespitosa	25	☑	FACW
3. Hordeum jubatum	15	☐	FAC+
4. Beckmannia syzigachne	10	☐	OBL
5. Juncus bufonius	5	☐	FACW+
6. Carex athrostachya	5	☐	FACW
7. Trifolium repens	10	☐	FACU+
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 0

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)

Dominance Test is >50% ☑

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: SPRT-3

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 3/2	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:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Soils List
- ☐ Listed on National Soils List
- ☑ Other (explain in remarks)

Taxonomy Subgroup: Ustic Haplocryolls

Confirm Mapped Type?: ☐

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Constructed wetland cell. Redox features have not developed. Low chroma (2) but no redox features. Problem area based on recently developed soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators

- ☐ Innundated
- ☑ Saturated in upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage patterns in wetlands

Secondary Indicators (2 or more required)

- ☐ Oxidized Rhizospheres along Living Roots
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

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): 12

Wetland Hydrology Present? Yes ☑ No ☐

Remarks:

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name Sportsman's Campground Mitigation Site **2. MDT project#** STPP 46-5(12)51 **Control#**

3. Evaluation Date 8/4/2011 **4. Evaluators** B.Vaughn, L. Soderquis **5. Wetland/Site# (s)** Sportman's constructed wetlands

6. Wetland Location(s): **T** 2N **R** 13W **Sec1** 36 **T** **R** **Sec2**

Approx Stationing or Mileposts

Watershed 10020004 **Watershed/County** Upper Missouri River Watershed/Deer Lodge County

7. Evaluating Agency Confluence for MDT

8. Wetland size acres 17.28

Purpose of Evaluation

How assessed: Measured e.g. by GPS

☐ **Wetlands potentially affected by MDT project**

9. Assesssment area (AA) size (acres) 17.28

☐ **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	Excavated	Permanent/Perennial	45
Depressional	Scrub-Shrub Wetland	Excavated	Seasonal/Intermittant	25
Depressional	Aquatic Bed	Excavated	Permanent/Perennial	10
Depressional	Emergent Wetland	Excavated	Seasonal/Intermittant	20				

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)

Grazing pasture surrounding site. No grazing within mitigation area. Hwy 47 on south boundary. Site managed as conservation easement.

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

Canada thistle (Cirsium arvense) and spotted knapweed (Centaurea maculosa), Priority 2B weeds.

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

AA is a gravel pit reclaimed for the purpose of providing wetland mitigation credit to MDT. Pasture on north, west, east boundaries. Hwy 47 and Big Hole River on south boundary. AA includes pre-existing scrub/shrub and aquatic bed wetlands. Most of site inundated (except for upland buffer and upland islands) on August 4, 2011.

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, scrub/shrub, and aquatic bed vegetated classes

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

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 Not listed for Township and Range on USF&WS

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 Bald eagle (S3), Western Toad (S2) (sus/inc)

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 MTNHP for Deer Lodge County, MDT observed eagles over site.

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 Habitat in AA suitable for a diveristy of birds. Greater than 50% of site inundated in 2011.

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**

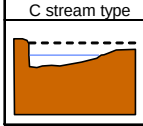
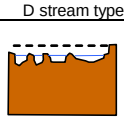
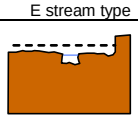
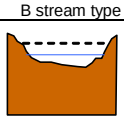
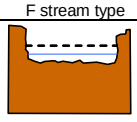
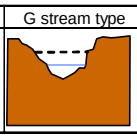
b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ◯ **Y** ◉ **N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*
Modifed Rating

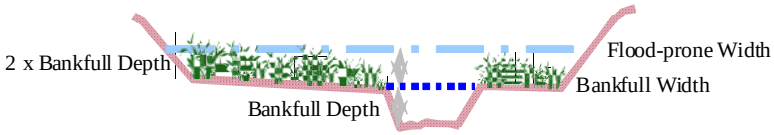
iii. Final Score and Rating: 0 NA **Comments:** Site is comprised of isolated depression wetlands that do not support a fishery.

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 / **Bankfull width** = **Entrenchment ratio**

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:

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: Assumes capacity for approx. 16 acres flooded to depth of 2 ft.

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: The majority of site contained inundated wetlands with emergent vegetation in 2011.

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: Creeping spikerush and beaked sedge dominated the shoreline of the inundated wetlands and upland islands sitewide. Assumes wetland cells 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 includes entire site (17.28 acres), high biological activity, no outlet, 50ft wide upland 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: Site inundated or saturated to ground surface in 2011.

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:

Site owned by MDT. Area open to hunting, bird watching, hiking.

General Site Notes

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Sportman's constructed wetlands

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0	☐
B. MT Natural Heritage Program Species Habitat	L	.2	1	3.456	☐
C. General Wildlife Habitat	H	.9	1	15.552	☑
D. General Fish Habitat	NA	0	0	0	☐
E. Flood Attenuation	NA	0	0	0	☐
F. Short and Long Term Surface Water Storage	H	1	1	17.28	☑
G. Sediment/Nutrient/Toxicant Removal	H	1	1	17.28	☑
H. Sediment/Shoreline Stabilization	H	1	1	17.28	☐
I. Production Export/Food Chain Support	H	.8	1	13.824	☐
J. Groundwater Discharge/Recharge	H	1	1	17.28	☑
K. Uniqueness	M	.6	1	10.368	☐
L. Recreation/Education Potential (bonus points)	H	.2	NA	3.456	☐
Totals:		6.7	9	115.776	
Percent of Possible Score			**74.44** %		

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 Site Photographs

MDT Wetland Mitigation Monitoring
Sportsman's Campground
Deer Lodge, Montana

Photo Point 1 – *Photo 1*
Bearing: East
Location: South central
Taken in 2009

Photo Point 1 – *Photo 2*
Bearing: North
Location: South central
Taken in 2009

Photo Point 1 – *Photo 1*
Bearing: East
Location: South central
Taken in 2010

Photo Point 1 – *Photo 2*
Bearing: North
Location: South central
Taken in 2010

Photo Point 1 – *Photo 1*
Bearing: East
Location: South central
Taken in 2011

Photo Point 1 – *Photo 2*
Bearing: North
Location: South central
Taken in 2011

Photo Point 2 – *Photo 1* **Location:** West edge of site
Bearing: East **Taken in 2009**

Photo Point 2 – *Photo 2* **Location:** West edge of site
Bearing: Southwest **Taken in 2009**

Photo Point 2 – *Photo 1* **Location:** West edge of site
Bearing: East **Taken in 2010**

Photo Point 2 – *Photo 2* **Location:** West edge of site
Bearing: Southwest **Taken in 2010**

Photo Point 2 – *Photo 1* **Location:** West edge of site
Bearing: East **Taken in 2011**

Photo Point 2 – *Photo 2* **Location:** West edge of site
Bearing: Southwest **Taken in 2011**

Photo Point 3 – *Photo 1* **Location:** North Central
Bearing: West **Taken in 2009**

Photo Point 3 – *Photo 2* **Location:** North Central
Bearing: South **Taken in 2009**

Photo Point 3 – *Photo 1* **Location:** North Central
Bearing: West **Taken in 2010**

Photo Point 3 – *Photo 2* **Location:** North Central
Bearing: South **Taken in 2010**

Photo Point 3 – *Photo 1* **Location:** North Central
Bearing: West **Taken in 2011**

Photo Point 3 – *Photo 2* **Location:** North Central
Bearing: South **Taken in 2011**

Photo Point 3 – *Photo 3* **Location:** North Central
Bearing: Southeast **Taken in 2009**

Photo Point 4 – *Photo 1* **Location:** East edge of site
Bearing: West **Taken in 2009**

Photo Point 3 – *Photo 3* **Location:** North Central
Bearing: Southeast **Taken in 2010**

Photo Point 4 – *Photo 1* **Location:** East edge of site
Bearing: West **Taken in 2010**

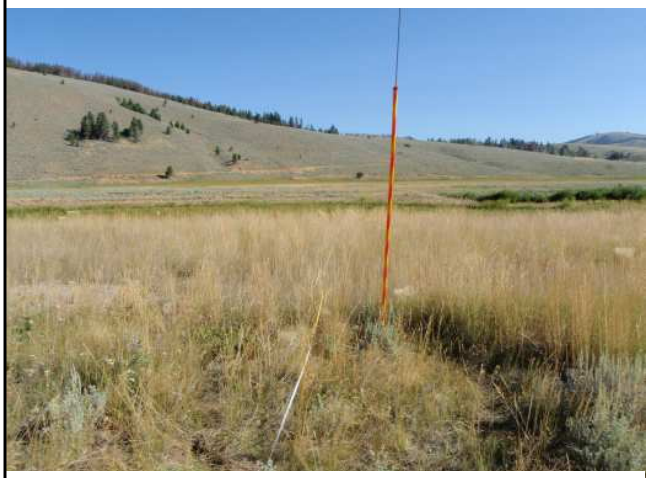
Photo Point 3 – *Photo 3* **Location:** North Central
Bearing: Southeast **Taken in 2011**

Photo Point 4 – *Photo 1* **Location:** East edge of site
Bearing: West **Taken in 2011**

Photo Point 4 – *Photo 2* **Location:** East edge of site
Bearing: Southwest **Taken in 2009**

Transect 1 – *Photo 1* **Location:** Start
Bearing: North **Taken in 2009**

Photo Point 4 – *Photo 2* **Location:** East edge of site
Bearing: Southwest **Taken in 2010**



Transect 1 – *Photo 1* **Location:** Start
Bearing: North **Taken in 2010**

Photo Point 4 – *Photo 2* **Location:** East edge of site
Bearing: Southwest **Taken in 2011**

Transect 1 – *Photo 1* **Location:** Start
Bearing: North **Taken in 2011**

Transect 1 – *Photo 2* **Location:** End
Bearing: South **Taken in 2009**

Transect 2 – *Photo 1* **Location:** Start
Bearing: North **Taken in 2009**

Transect 1 – *Photo 2* **Location:** End
Bearing: South **Taken in 2010**

Transect 2 – *Photo 1* **Location:** Start
Bearing: North **Taken in 2010**

Transect 1 – *Photo 2* **Location:** End
Bearing: South **Taken in 2011**

Transect 2 – *Photo 1* **Location:** Start
Bearing: North **Taken in 2011**

Transect 3 – *Photo 1*
Bearing: North
Location: Start
Taken in 2009

Transect 3 – *Photo 1*
Bearing: South
Location: End
Taken in 2009

Transect 3 – *Photo 2*
Bearing: North
Location: Start
Taken in 2010

Transect 3 – *Photo 2*
Bearing: South
Location: End
Taken in 2010

Transect 3 – *Photo 3*
Bearing: North
Location: Start
Taken in 2011

Transect 3 – *Photo 3*
Bearing: South
Location: End
Taken in 2011

Data Point 1 – *Sprt-1* **Location:** Com. 1
Bearing: **Taken in 2011**

Data Point 2 – *Sprt-2* **Location:** Com. 5/3
Bearing: **Taken in 2011**

Data Point 3 – *Sprt-3* **Location:** Com. 5
Bearing: **Taken in 2011**

Appendix D

Project Plan Sheet

MDT Wetland Mitigation Monitoring
Sportman's Campground
Deer Lodge, Montana

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	STPP 46-5(21)51	WM8

PT 15+34.14 IS S. 74°51'52" W.
398.46 m FROM THE EN CORNER
OF SECTION 36. T.2 N. , R.13 W.

14+60 TO 15+00
REMOVE BERM
TO CONNECT
WETLANDS

NOTE: MOVE EXISTING TOPSOIL
STOCKPILES TO NEW
STOCKPILE AREA.

PERMANENT FENCE

PI = 13+05.42
Δ = 14° 26' 18"
R = 1,825 m
T = 231.17 m
L = 459.99 m

EXISTING WETLAND
(DO NOT DISTURB)

CONST. LIMITS

398 M² = 0.098 AC.

EXISTING WETLAND

EXISTING WETLAND

ISLAND
902 M² = 0.223 AC.

4039 M² = 1.00 ACRE POND
FLOOR ELEV. 1 764 m

EXISTING TOPSOIL STOCKPILE

TOPSOIL STOCKPILE AREA

TEMPORARY FENCE

PERMANENT FENCE

ISLAND
746 M² = 0.184 AC.

CONST. LIMITS

PWR

EXISTING MDT MAINTENANCE YARD

ISLAND
719 M² = 0.178 AC.

PT 15+34.14

S 76° 01' 25" E

EXISTING TOPSOIL STOCKPILES

STATE ROUTE 43

OUT HOUSE

OUT HOUSE

EXISTING WETLAND

12 13 14 15 16 17 18 19

25 30
36 31

PERMANENT FENCE

TOPSOIL STOCKPILE AREA

9 10

N 89° 32' 17" E

STAGING AREA

TEMPORARY FENCE

PC 10+74.25

OUTLET DT.

LEGEND

- EXISTING WETLAND
- EXISTING TREE
- FENCE
- EXISTING CONTOURS
- TEMPORARILY FLOODED
- ROSE PLANTING
- REMOVE BERM

T. 2 N. R. 13 W.

WETLAND MITIGATION SITE
AND FEATURES

SCALE 1: 1000

	DESIGNED BY
...\a137enplnz01.dgn	DRAWN BY
06 AUG 2003	APPROVED BY
11:00:05	REVISED BY
3 MBohnsen	
2	
1	

mten\a137enplnz01.dgn