MONTANA DEPARTMENT OF TRANSPORTATION WETLAND MITIGATION MONITORING REPORT: YEAR 2002

Fourchette Creek Reservoir Complex Phillips County, Montana



Prepared for:

MONTANA DEPARTMENT OF TRANSPORTATION
2701 Prospect Avenue
Helena, MT 59620-1001

Prepared by: **LAND & WATER CONSULTING, INC.** P.O. Box 8254 Missoula, MT 59807

February 2003

Project No: 130091.023



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1.0 INTRODUCTION

The Fourchette Creek Reservoir Complex was constructed in the Missouri River Breaks in 1997 and is considered the first attempted wetland mitigation bank in Montana (Urban pers. comm.). The project was enacted to mitigate wetland impacts associated with several Montana Department of Transportation (MDT) projects constructed between 1992 and 1995 that resulted in the cumulative loss of 9.84 wetland acres. These include Stanford East & West, Geyser-North, Eddies Corner-South, Ross Fork Creek – Judith Basin County, Judith River – 6 miles NW of Moore, and Ross Fork Creek – 5 Miles NW of Moore. Constructed in Watershed #9 (Middle Missouri) within the MDT Glendive District, the site is located approximately 15 miles southwest of Sun Prairie (50 miles south of Malta) in Phillips County (**Figure 1**). The site occurs on Bureau of Land Management (BLM) lands roughly 2 miles west and 1.5 miles north of the Charles M. Russell National Wildlife Refuge.

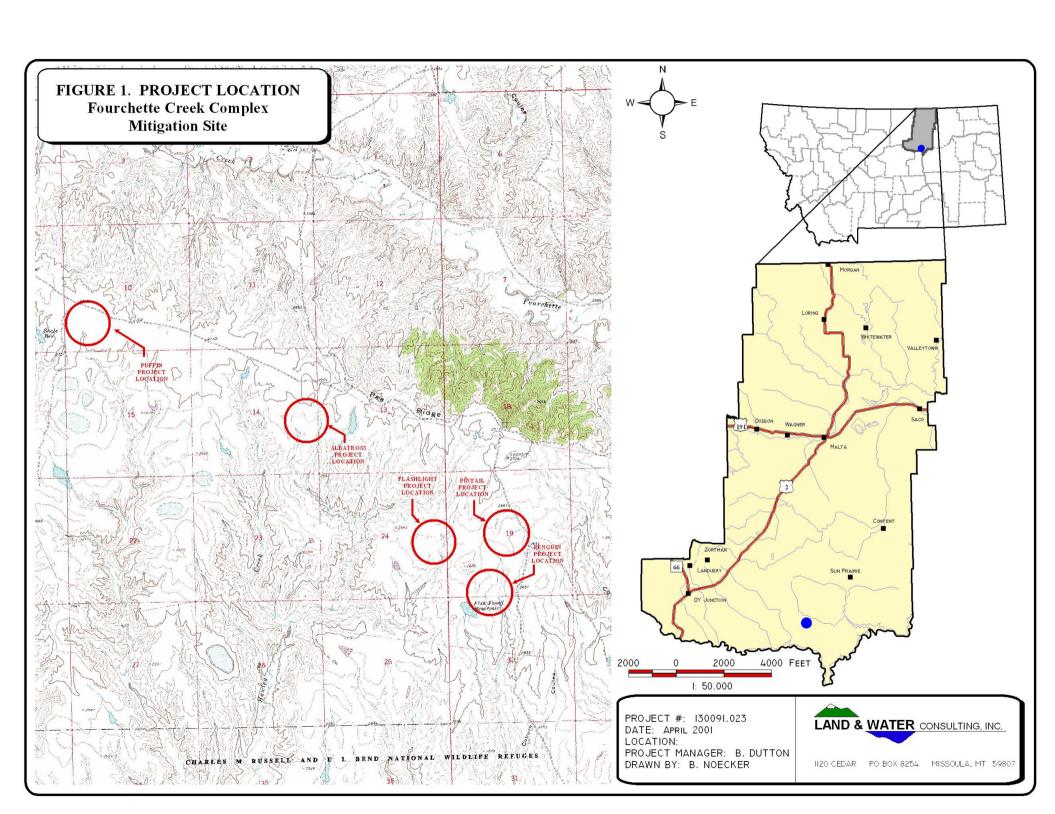
In conjunction with the BLM, MDT's intent was to construct five 2.6 to 6-acre shallow reservoirs at the mitigation site: Puffin, Albatross, Flashlight, Pintail, and Penguin (**Figure 1**). Spaced over approximately four linear miles, these structures were designed to maximize surface area with water depths less than 3 feet, maximizing the potential for establishment of emergent vegetation. The reservoirs were constructed in intermittent drainages to collect surface runoff during spring snowmelt and rainstorm events. No wetlands were present in these areas prior to construction (MDT undated).

The primary objectives at the mitigation site are to provide waterfowl pair and brood habitat and promote greater distribution and use of available habitat for additional wildlife species by providing water sources, food, and cover. Specifically, MDT and BLM seek to provide approximately 10 to 22 acres of emergent wetlands with semi-permanent, fresh-mixosaline water regimes at the mitigation site. Primary wetland functions to be provided include streambank stabilization; nutrient detention/removal/transformation; sediment detention/reduction; intra/inter ecosystem integrity maintenance; and provision of a setting for recreational activities (MDT undated).

Final general success criteria at each reservoir include provision of: waterfowl pair and brood habitat (open water interspersed with emergent vegetation); a mosaic of emergent wetland vegetation communities; and adequate hydrology (maximization of areas three feet in depth) (MDT undated). Again, the goal was to create between 10 and 22 wetland acres between the five ponds.

Specific performance criteria identified in the monitoring plan contained within the project prospectus (MDT undated) address percent cover of emergent species and wetland functions. The plan states that the goal is to provide Type 3 and/or Type 4 wetlands according to the U.S. Fish & Wildlife Service (USFWS) Circular 39 definition of wetland types, with the provision of 10 to 20 percent emergent species cover within 5 years of construction. According to the monitoring plan, primary functions to be evaluated using the MDT method include wildlife use, enhanced biodiversity, water retention, silt retention, recreational opportunity, and erosion control.





Monitoring methods outlined in the plan include: estimation of percent canopy cover of wetland vegetation; mapping of vegetation zones and open water; annual photograph points; water quality sampling; and macroinvertebrate sampling. With the exception of water quality sampling, which will be conducted separately by MDT (Urban pers. comm.), each of these methods was employed during 2002 monitoring.

The complex was first monitored in 2001. This report documents the results of the 2002 monitoring effort at the site. The specific monitoring areas for each of the five impoundments are illustrated in **Figure 2** for each site (**Appendix A**).

2.0 METHODS

2.1 Monitoring Dates and Activities

Each of the five reservoirs was visited on July 29th, 2002. All information contained on the Wetland Mitigation Site Monitoring Form (**Appendix B**) was collected at this time. Activities and information conducted/collected included: wetland delineation; mapping of wetland/open water aquatic habitat boundaries; vegetation community mapping; soils data; hydrology data; bird and general wildlife use; photograph points; macroinvertebrate sampling; functional assessment; and (non-engineering) examination of dike structures. Vegetation transects were not required at this site (Urban pers. comm.).

2.2 Hydrology

Hydrologic indicators were evaluated at each impoundment during the mid-season visit. Predicted high-water lines for each impoundment are presented on plan sheets in **Appendix D**. Wetland hydrology indicators were recorded using procedures outlined in the Army Corps (COE) 1987 Wetland Delineation Manual (Environmental Laboratory 1987). Hydrology data were recorded on COE Routine Wetland Delineation Data Forms (**Appendix B**).

All additional hydrologic data were recorded on the mitigation site monitoring form (**Appendix B**). The boundary between wetlands and open water aquatic habitats (no rooted vegetation present) was mapped on the aerial photograph and an estimate of the average water depth at this boundary was recorded.

No groundwater monitoring wells occur at the site. If located within 18 inches of the ground surface (soil pit depth for purposes of delineation), groundwater depths were documented on the routine wetland delineation data form at each data point.

2.3 Vegetation

At each impoundment, general dominant species-based vegetation community types (e.g., *Typha latifolia/Scirpus acutus*) were delineated on an aerial photograph during the mid-season visit. Standardized community mapping was not employed as many of these systems are geared towards climax vegetation and may not reflect yearly changes. Estimated percent cover of the



dominant species in each community type was listed on the site monitoring form (**Appendix B**). Establishment of permanent vegetation transects was not required at this mitigation site (Urban pers. comm.).

A comprehensive plant species list started in 2001 was updated as new species were encountered in 2002. Ultimately, observations from past years will be compared with new data to document vegetation changes over time. No woody species were planted at any of the impoundments. Consequently, no monitoring relative to the survival of such species was conducted.

2.4 Soils

Soils were evaluated during the mid-season visit according to hydric soils determination procedures outlined in the COE 1987 Wetland Delineation Manual. Soil data were recorded for each wetland determination point on the COE Routine Wetland Delineation Data Form (**Appendix B**). The most current terminology used by NRCS was used to describe hydric soils (USDA 1998).

2.5 Wetland Delineation

Wetland delineation was conducted at each impoundment according the 1987 COE Wetland Delineation Manual. Wetland and upland areas within the monitoring area were investigated for the presence of wetland hydrology, hydrophytic vegetation and hydric soils. The indicator status of vegetation was derived from the National List of Plant Species that Occur in Wetlands: North Plains Region 4 (Reed 1988). The information was recorded on COE Routine Wetland Delineation Data Forms (**Appendix B**). The wetland/upland boundary delineated and recorded with a resource grade GPS unit in 2001 was modified by hand as necessary on the 2001 aerial photo. The wetland/upland boundary in combination with the wetland/open water habitat boundary was used to calculate the jurisdictional wetland area developed at each impoundment.

2.6 Mammals, Reptiles, and Amphibians

Mammal, reptile, and amphibian species observations and other positive indicators of use, such as vocalizations, were recorded on the wetland monitoring form during each mid-season visit. Indirect use indicators, including tracks; scat; burrows; eggshells; skins; bones; etc., were also recorded. These observations were recorded as the observer traversed the site while conducting other required activities. Direct sampling methods, such as snap traps, live traps, and pitfall traps, were not implemented. A comprehensive species list for the entire site was compiled. Observations from past years will ultimately be compared with new data.

2.7 Birds

Bird observations were recorded during the mid-season visit. No formal census plots, spot mapping, point counts, or strip transects were conducted. Using the bird survey protocol (**Appendix E**) as general guidance, species were recorded as an observer traversed each impoundment during the mid-season visit. In general, bird observations were recorded incidental to other monitoring activities. Observations were categorized by species, activity code, and



general habitat association (see data forms in **Appendix B**). Observations from past years will be compared with new data.

2.8 Macroinvertebrates

Macroinvertebrate samples were collected during the mid-season site visit and data recorded on the wetland mitigation monitoring form. Per MDT instruction, a single sample was collected at Puffin, Albatross, Flashlight, and Penguin reservoirs (Urban pers. comm.). Macroinvertebrate sampling procedures are included in **Appendix E**. The approximate locations of these sample points are shown on **Figure 2** for each site (**Appendix A**). Samples were preserved as outlined in the sampling procedure and sent to a laboratory for analysis.

2.9 Functional Assessment

Functional assessments were completed at each wetland impoundment using the 1999 MDT Montana Wetland Assessment Method. Field data necessary for this assessment were collected during the mid-season site visit. An abbreviated field data sheet for the 1999 MDT Montana Wetland Assessment Method was compiled to facilitate rapid collection of field information. The remainder of the functional assessment was completed in the office.

2.10 Photographs

Photographs were taken showing the current land use surrounding the site, the upland buffer, the monitored area, and macroinvertebrate sampling locations. Each photograph point location was recorded with a resource grade GPS in 2001. The approximate location of these photo points is shown on **Figure 2** for each site (**Appendix A**). All photographs were taken using a 50 mm lens. A description and compass direction for each photo was recorded on the wetland monitoring form.

2.11 GPS Data

During the 2001 monitoring season, survey points were collected with a resource grade GPS unit at all photograph locations and along wetland boundaries. No GPS data were collected during 2002.

2.12 Maintenance Needs

Dike structures were examined during the site visit for obvious signs of breaching, damage, or other problems. This did not constitute an engineering-level structural inspection, but rather a cursory examination. Current or future potential problems were documented.



3.0 RESULTS

3.1 Hydrology

According to the Western Regional Climate Center, Zortman (20 miles northwest of site) yearly precipitation total for 2001 (13.78 inches) was 74 percent of the total annual mean precipitation (18.87 inches) in this area. In 2002, the approximate precipitation total at Zortman was about 14 inches from January through July, which is comparable to the yearly mean of 13 inches for this period. Thus, precipitation was likely at or above average at the site in 2002.

Inundation was present at each of the five impoundments. Overall, water depths at open water/rooted vegetation interfaces ranged between approximately zero inches (the water's edge) and approximately three feet. However, all sites were inundated to lesser extents than were observed during 2001, despite increased precipitation during 2001. The reason for this is unknown, but could be related to increased evaporation. Open water areas are shown on **Figure 3** for each site (**Appendix A**). Specific recorded values are provided for each impoundment on the attached data forms.

Penguin and Flashlight were approximately 85 percent inundated (slightly less than observed during 2001), with average depths of one to two feet and a range of depths from zero to six+ feet. Deepest areas were located in the center of the impoundments, which were as yet unvegetated.

Pintail was approximately 35 percent inundated, with an average depth of one to two feet and a range of depths from zero to about three feet. Albatross was approximately 75 percent inundated, with an average depth of one to two feet and a range of depths from zero to about three feet. Both sites were inundated to a lesser extent than observed during 2001. Deepest areas were located in the center of the impoundments. Due to "drawdown" at these sites over that observed during 2001, wetland fringes were slightly expanded around impoundment edges. Little to no wetland vegetation was observed within the wetted basin of either site. Surface water may be of sufficient duration to kill upland plants, but of insufficient duration to support hydrophytes every year or throughout a given growing season. Consequently, these areas were classified as potential "problem areas" (seasonal wetlands) for purposes of delineation. Water was extremely turbid at these sites, which could be indicative of an upstream erosion problem, recent cattle use, or chemical or other problems.

The excavated portion of Puffin was only 20 percent inundated, and still supported no wetland plants. Excessive depths and steep slopes in the excavated area at the dike face likely contribute to this condition. Water needs to climb several feet from the bottom of the excavated area in order to back upstream (upgradient) as designed. Based on a lack of watermarks, driftlines, etc. upgradient of the excavated area, this has probably not occurred with any frequency, if at all, over the project life.

3.2 Vegetation

Vegetation species identified on the site are presented in **Table 1** and on the attached data form. Three wetland community types were identified and mapped on the mitigation area in 2001



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(**Figure 3**, **Appendix A**). These included Type 1: *Myriophyllum/Potamogeton*, Type 2: *Hordeum jubatum/Eleocharis*, and Type 3: *Hordeum jubatum/Agropyron*. Two additional wetland types were mapped in 2002 that had established in drawdown areas at Albatross. These were Type 4: *Scirpus maritimus/Typha latifolia* and Type 5: *Xanthium strumarium*. Dominant species within each of these communities are listed on the attached data form (**Appendix B**).

Table 1: 2001, 2002 Fourchette Creek Vegetation Species List

Species	Region 4 (North Plains) Wetland Indicator	Penguin	Pintail	Flashlight	Albatross	Puffin
Agropyron dasystachyum	FAC		x,#			
Agropyron repens	FAC		x,#		#	
Agropyron smithii		x,#				x,#
Alisma plantago-aquatica	OBL			x,#		
Artemisia cana	FACU					#
Artemisia frigida		x,#	x,#	x,#	#	x,#
Artemisia tridentate		x,#	#	x,#	x,#	x,#
Atriplex argentea	FACU			#		
Beckmannia syzigachne	OBL	x,#				
Bouteloua gracilis			x,#		x,#	x,#
Chenopodium album	FAC	#	#	#	#	
Chrysothamnus nauseosus				x,#		
Cirsium arvense	FACU	x,#	x,#	x,#	#	
Distichlis spicata	FACW		X	x,#	#	
Echinochloa crusgalli	FACW		x,#		#	
Eleocharis acicularis	OBL	x,#	#	x,#	#	
Eleocharis palustris	OBL	x,#	x,#	x,#	x,#	
Elodea Canadensis	OBL	x,#		Í	,	
Erodium cicutarium		,	x,#	x,#		x,#
Grindelia squarrosa		x,#	x,#	x,#	x,#	x,#
Gutierrezia sarothrae		x,#	,	1-,	,	x, #
Helianthus annuus	FACU	x,#	x,#		#	,
Hordeum jubatum	FAC+	x,#	x,#	x,#	x,#	
Juncus balticus	OBL	#	11, 11	11, 11	#	
Koeleria pyramidata				x,#	"	
Marsilea vestita	OBL			,	x,#	
Medicago lupulina	FACU				,	#
Melilotus officinalis	FACU-	#	#	#	#	
Myriophyllum spicatum	OBL	x,#		x,#		
Nasturtium officinale	OBL	11, 11		x,#		
Opuntia sp.				x,#		x,#
Polygonum lapathifolium	OBL	x,#	#	x,#	#	л, п
Polygonum sp. (upland)	?	Α, "	x,#	x,#	x,#	
Potamogeton foliosus	OBL	x,#	х, п	x,#	#	
Puccinellia nuttalliana	OBL	x,#	#	x, #	"	
Rumex crispus	FACW	#	#	#	#	
Sagittaria cuneata	OBL	x,#	"	x,#	#	
Salix exigua	FACW+	Α, 11		Α, 11	x,#	
Schizachyrium scoparium		x,#		1	Λ, π	
Scirpus acutus	OBL	Λ, π		x,#		
Scirpus americanus	OBL		#	#		
Scirpus maritimus	NI		"	x,#	#	
Spergularia rubra				λ, π #	π	
Thlaspi arvense	NI			π	#	
Typha latifolia	OBL				#	
Xanthium strumarium	FAC	x,#	#	x,#		v
Adminium Strumarium		ED 2001 # - O		,	x,#	X

Type 1 occurs in aquatic bed habitats at Penguin and Flashlight. Type 2 occurs in emergent habitats surrounding impoundments at Penguin, Flashlight, and Albatross. Type 3 occurs primarily around the impoundment perimeter at Pintail. Types 4 and 5 occur in drawdown areas of Albatross.



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Upland communities (Type 6) are dominated by upland grasslands and shrub-steppe habitats. Common species include big sage (*Artemisia tridentata*), fringed sage (*Artemisia frigida*), curlycup gumweed (*Grindelia squarrosa*), broom snakeweed (*Gutierrezia sarothrae*), prickly pear cactus (*Opuntia sp.*), rubber rabbitbrush (*Chrysothamnus nauseosus*), blue gramma (*Bouteloua gracilis*), quackgrass (*Agropyron repens*), prairie junegrass (*Koeleria pyramidata*), and western wheatgrass (*Agropyron smithii*).

No vegetation transects were required or conducted at these impoundments.

3.3 Soils

A published soil survey does not exist for Phillips County. However, soils have been mapped for the Penguin (Bascovey clay) and Albatross (Sunburst clay) sites. Generally, soils at all of the impoundments consist of poorly drained clays. Soils sampled in wetland areas at Penguin were consistently comprised of clays with a matrix color of 10YR4/2 and distinct, abundant mottles in the range of 10YR5/8, indicating a fluctuating water table. All were saturated within 12" of the surface.

Soils at Flashlight were comprised of clays with a matrix color of 2.5Y4/2 to 2.5Y or 10YR 4/3 and often contained faint mottles at 2.5Y5/6. These soils were saturated to the surface throughout the site. Because the soils support dominant vegetation species that have an indicator status of OBL or FACW and the wetland/upland border is abrupt, hydric soils are assumed to be present under application of the 1987 delineation manual (Environmental Laboratory 1987).

Soils at both Pintail and Albatross were comprised of clays with a matrix color of 10YR4/2 and faint to distinct mottles at 10YR5/6 to 10YR5/8. Gleyed 5GY4/1 soils were observed in drawdown areas of Pintail towards the center of the impoundment. Darker soils (2.5Y4/1) were observed in drawdown areas of Albatross. These soils were saturated to within 12 inches of the surface at both sites. Soils adjacent to the impoundment at Puffin were saturated within 12 inches of the surface, and were comprised of clays with a matrix color of 10YR4/1 and faint mottles at 10YR4/6. As was observed during 2001, soils at Puffin supported no wetland vegetation.

3.4 Wetland Delineation

Delineated wetland boundaries are illustrated for each site on **Figure 3** (**Appendix A**). Completed wetland delineation forms are included in **Appendix B**. Soils, vegetation, and hydrology are discussed in preceding sections. Borders did not change substantially, but 2001 borders recorded with the GPS unit were adjusted and using aerial photographs. 2002 delineation results are as follows:

Penguin: 0 wetland acres pre-existing.

1.11 wetland acres created (emergent, aquatic bed).

0.27 acre open water.



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Flashlight: 0 wetland acres pre-existing.

1.09 wetland acres created (emergent, aquatic bed).

0.28 acre open water.

Pintail: 0 wetland acres pre-existing.

0.60 wetland acre created (emergent). 0.80 acre open water (at max pool).

Albatross: 0 wetland acres pre-existing.

0.37 wetland acre created (emergent).

0.50 acre open water.

Puffin: 0 wetland acres pre-existing.

0 wetland acres created. 0.20 acre open water.

Inclusive of open water areas, approximately 5.22 acres of aquatic habitat have been created on the Fourchette Creek mitigation site to date. This is a slight decrease from the 5.25 acres delineated during 2001, perhaps due to slightly less inundation at Pintail and Puffin, but possibly due to inherent mapping error between the two years.

3.5 Wildlife

Wildlife species, or evidence of wildlife, observed on the site during 2001 and 2002 monitoring efforts are listed in **Table 2**. Specific evidence observed, as well as activity codes pertaining to birds, is provided on the completed monitoring form in **Appendix B**. Two mammal, two amphibian, one reptile, and five bird species were noted using portions of the mitigation site during the July 2002 visit. Greatest use appeared to occur at Penguin and Flashlight reservoirs, which both support large frog populations and also support painted turtles (*Chrysemys picta*).

Very few avian species were observed in the project area, which may have been a function of season (post-nesting), weather (hot, dry), time of day, or a combination. However, it should be noted that few bird signs (tracks, scat, etc.) were observed at any of the impoundments. The degree of seasonal use that these impoundments receive likely varies from year to year in proportion to water availability, and is largely unknown at this time. Birding results were similar to 2001.

Of special interest were observations of northern leopard frogs (*Rana pipiens*) at Penguin Reservoir; none were observed at Flashlight as they were during 2001. Leopard frogs are considered "species of special concern" by the Montana Natural Heritage Program (MNHP) due largely to their apparent extirpation from the portion of their historic distribution west of the Continental Divide. This species has been assigned a rank of S3 east of the Divide by the MNHP. Due to the hundreds of leopard frogs observed at Penguin and Flashlight reservoirs during 2001 and obvious breeding habitat, these sites were again classified as a Category II wetlands (using the 1999 MDT Wetland Assessment Method) based on sensitive species habitat during 2002.



Table 2: Fish and Wildlife Species Observed on the Fourchette Creek Mitigation Complex during 2001 and 2002

	Penguin	Flashlight	Pintail	Albatross	Puffin
FISH					
Unidentified Minnow Species (Hybognathus sp.)		X			
AMPHIBIANS					
Western Chorus Frog (Pseudacris triseriata)	x, #	x, #		X	
Northern Leopard Frog (Rana pipiens)	x,#	X	X		
REPTILES					
Painted Turtle (Chrysemys picta)	x, #	#			
Plains Garter Snake (Thamnophis radix)		X			
BIRDS					
Eastern Kingbird (Tyrannus tyrannus) Northern	X	X	X	X	
Harrier (Circus cyaneus)		X			
Killdeer (Charadrius vociferous)	x, #	x, #	x,#	X	
Spotted Sandpiper (Actitis macularia)	X	X	X	X	
Gadwall (Anas strepera)		#			
American Avocet (Recurvirostra americana)				#	
Savannah Sparrow (Passerculus sandwichensis)				#	
Willet (Catoptrophorus semipalmatus)		#	#		
MAMMALS					
Elk (Cervus elaphus)					X
Coyote (Canis latrans)	#				
Mule Deer (Odocoileus hemionus)		#	#	#	
	served in 2001		•		
# obs	erved in 2002				

3.6 Macroinvertebrates

Macroinvertebrate sampling results are provided in **Appendix B** and summarized below.

Puffin. Sampling yielded few organisms in both years, rendering bioassessment results unreliable. The dearth of organisms suggested that poor water quality and/or limited habitats affected invertebrate assemblages, assuming adequate sampling effort. In 2002, colonization of benthic substrates (e.g. *Chironomus* sp.) as well as the water column (e.g. *Chaoborus* sp.) appeared to have taken place, whereas the water surface was the only habitat to yield animals in the previous year. Since *Chironomus* sp. is a hemoglobin-bearing taxon, it would appear that warm water temperatures, nutrient enrichment and/or other factors have created hypoxic conditions in the substrates.

Flashlight. Sampling yielded few organisms in both years, rendering bioassessment results unreliable. The dearth of organisms suggested that poor water quality and/or limited habitats affected invertebrate assemblages, assuming adequate sampling effort. Diversity of sampled taxa increased between the two years, however, suggesting that some slight improvement in conditions may have taken place. The fauna in both years suggested that macrophytes contributed to habitat complexity, and an increase in the richness and numbers of midges suggested improved colonization of substrates in 2002.

Penguin. The hemoglobin-bearing midge taxa that were so abundant in the 2001 sample were largely replaced by a less tolerant fauna in 2002, suggesting that benthic substrate hypoxia may



have been alleviated by the latter year. Improvement in the biotic index value reflected an apparent improvement in water quality, either by mitigation of warm temperatures or lessened nutrient enrichment, or both. The other components of the invertebrate assemblage remained remarkably similar between the two years. The bioassessment method employed here implied optimal biologic conditions at this site in both years.

Albatross. Sampling yielded few organisms in both years, rendering bioassessment results unreliable. The dearth of organisms suggested that poor water quality and/or limited habitats affected invertebrate assemblages, assuming adequate sampling effort. Changes in the taxonomic composition of the depauperate fauna between the two years, however, suggested that some improvement of habitat complexity may have occurred in the interim.

Pintail: Macroinvertebrates were not sampled at Pintail Reservoir.

3.7 Functional Assessment

Completed functional assessment forms are presented in **Appendix B**. Functional assessment results are summarized in **Table 3** and are identical to 2001 results. Penguin and Flashlight rated as Category II wetlands, primarily due to high sensitive species habitat (northern leopard frog) ratings (see discussion under **Section 3.5**). These sites would have achieved higher scores, but for the high disturbance associated with grazing. Each of these sites provides habitat for a variety of wildlife species, particularly amphibians. Penguin and Flashlight both support emergent and aquatic bed communities, and, based on MDT observations (Urban pers. comm.), Flashlight provides a degree of fish habitat. Wildlife habitat, surface water storage, sediment/nutrient/toxicant removal, shoreline stabilization, and food chain support are prominent functions at these sites.

Pintail and Albatross rated as Category IV wetlands. This was primarily due to low vegetative diversity, high disturbance (grazing), and low acreage of actual wetlands present within these assessment areas. Surface water storage is a prominent function at these sites. It should be noted that sediment/nutrient/toxicant removal received a low rating due to the extreme turbidity (impairment) and lack of wetland vegetation at these sites.

A wetland functional assessment was not conducted at Puffin due to the absence of wetlands at this site. According to MDT (Urban pers. comm.) the site is periodically used as an elk wallow, but contained a dozen cattle during 2002 monitoring.

Based on functional assessment results (**Table 3**), approximately 20.98 functional units have been gained thus far at the Fourchette Creek mitigation site.

3.8 Photographs

Representative photographs taken from photo-points are provided in **Appendix C**. 2002 Aerial photographs are also provided in **Appendix C**.



Table 3: Summary of 2002 Wetland Function/Value Ratings and Functional Points ¹ at the Fourchette Creek Mitigation Project

Function and Value Parameters	Wetland Sites					
From the 1999 MDT Montana	Penguin	Flashlight	Pintail	Albatross	Puffin Reservoir	
Wetland Assessment Method	Reservoir	Reservoir	Reservoir	Reservoir	Pullin Reservoir	
Listed/Proposed T&E Species	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.3)	NA (no wetlands)	
Habitat						
MNHP Species Habitat	High (1.0)	High (1.0)	Low (0.2)	Low (0.1)	NA (no wetlands)	
General Wildlife Habitat	High (0.8)	High (0.8)	Low (0.3)	Low (0.3)	NA (no wetlands)	
General Fish/Aquatic Habitat	NA	Mod (0.5)	NA	NA	NA (no wetlands)	
Flood Attenuation	Low (0.2)	Low (0.2)	Low (0.2)	Low (0.2)	NA (no wetlands)	
Short and Long Term Surface Water Storage	Mod (0.6)	Mod (0.6)	Mod (0.6)	Mod (0.6)	NA (no wetlands)	
Sediment, Nutrient, Toxicant Removal	Mod (0.5)	Mod (0.5)	Low (0.3)	Low (0.3)	NA (no wetlands)	
Sediment/Shoreline Stabilization	Mod (0.6)	Mod (0.6)	Low (0.2)	Low (0.2)	NA (no wetlands)	
Production Export/Food Chain	Mod (0.7)	Mod (0.7)	Low (0.3)	Low (0.3)	NA (no wetlands)	
Support						
Groundwater Discharge/Recharge	Low (0.1)	Low (0.1)	Low (0.1)	Low (0.1)	NA (no wetlands)	
Uniqueness	Low (0.2)	Low (0.2)	Low (0.2)	Low (0.2)	NA (no wetlands)	
Recreation/Education Potential	Low (0.1)	Low (0.1)	Low (0.1)	Low (0.1)	NA (no wetlands)	
Actual Points/Possible Points	5.1 / 11	5.6 / 12	2.8 / 11	2.7 / 11	NA (no wetlands)	
% of Possible Score Achieved	46%	47%	25%	25%	NA (no wetlands)	
Overall Category	II	II	IV	IV	NA (no wetlands)	
Total Acreage of Assessed Aquatic	1.38 ac	1.37 ac	1.40 ac	0.87 ac	0.20 ac (OW only)	
Habitats within Easement						
Functional Units (acreage x actual	7.04 fu	7.67 fu	3.92 fu	2.35 fu	NA (no wetlands)	
points)						
Net Acreage Gain	1.38 ac	1.37 ac	1.40 ac	0.87 ac	0.20 ac (OW only)	
Net Functional Unit Gain	7.04 fu	7.67 fu	3.92 fu	2.35 fu	NA (no wetlands)	
Total Functional Unit "Gain"	20.98 Total Fu	inctional Units		•	,	
See completed MDT functional assessment	orms in Appendix l	B for further detail.				

3.9 Maintenance Needs/Recommendations

All dikes were in good condition during the mid-season visit.

Puffin Reservoir has developed no wetlands, presumably due to the depth of excavation and steep gradient of side slopes. As discussed in the 2001 report, it is our recommendation that MDT/BLM re-visit the design of this site, which could involve filling in a portion of the pit excavated along the dike face and minor upstream excavation. This may allow water to back further upgradient, reduce water depths & side slope gradients, and increase surface area of the reservoir. This would also likely result in a more undulating shoreline, as opposed to the largely rectangular shoreline that currently exists.

It may also benefit MDT to investigate water quality at Puffin, Pintail, and Albatross for conditions that would preclude aquatic plant growth. Limited planting may also benefit these three impoundments, although water availability and quality may limit success.



All sites were impacted by grazing, primarily through trampling. MDT/BLM may want to consider fencing these areas and providing water gaps to deeper areas in order to allow cattle access while confining associated impacts.

3.10 Current Credit Summary

Target performance criteria included provision of 10 to 20 percent emergent species cover within 5 years of construction. This appears to have been achieved at Penguin, Flashlight, and possibly Pintail and Albatross reservoirs (during drawdown periods), but not at Puffin.

Primary target wetland functions included wildlife use, enhanced biodiversity, water retention, silt retention, recreational opportunity, and erosion control. Highest quality wildlife habitat is provided at Penguin and Flashlight, as are biodiversity, silt retention, and erosion control. Other reservoirs provide silt retention, but in excessive quantities that impair them. A degree of erosion control is also provided at these sites, but is limited by scant vegetation. All sites provide water retention, and none of the sites were perceived to provide substantial recreational opportunities.

As the project stands, approximately 5.22 acres of aquatic habitats have been created, inclusive of all open water components. Approx. 3.72 acres of "wetlands" have been created, inclusive of minor open water components associated with Penguin and Flashlight reservoirs. Approximately 20.98 functional units have been created at the site to date. The maximum assignable credit at this site as of 2002, inclusive of all open water areas, is approximately 5.22 acres.

4.0 REFERENCES

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- Reed, P.B. 1988. National list of plant species that occur in wetlands: North Plains (Region 4). Biological Report 88(26.4), May 1988. U.S. Fish and Wildlife Service. Washington, D.C.
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- USDA Natural Resources Conservation Service. 1998. *Field Indicators of Hydric Soils in the United States*, Version 4. G. Hurt, P. Whited and R. Pringle (eds.). USDA, NRCS Fort Worth, TX.



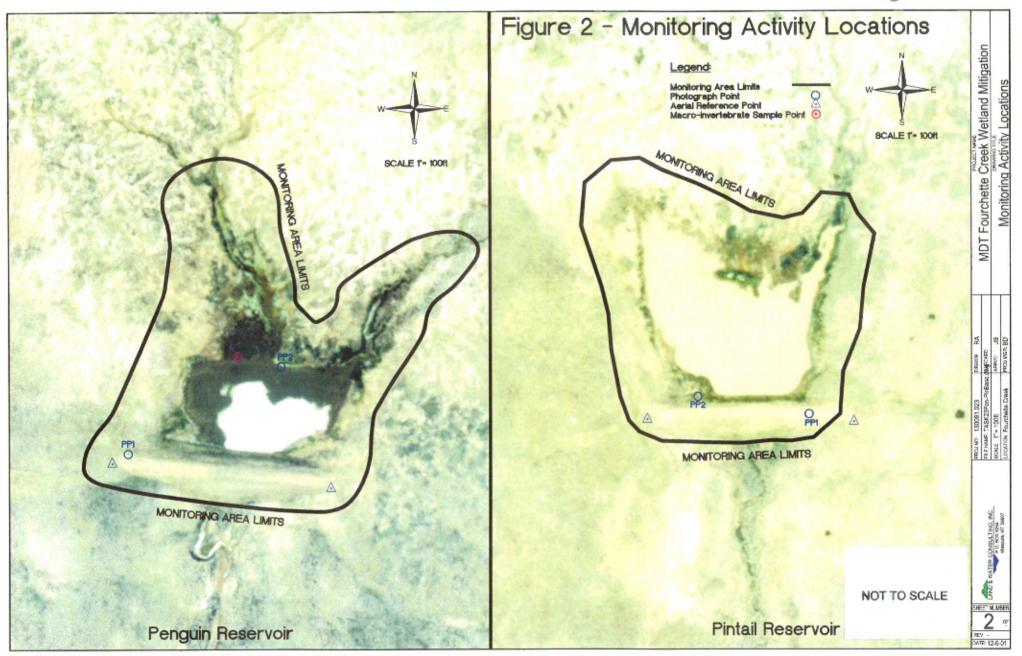
Appendix A

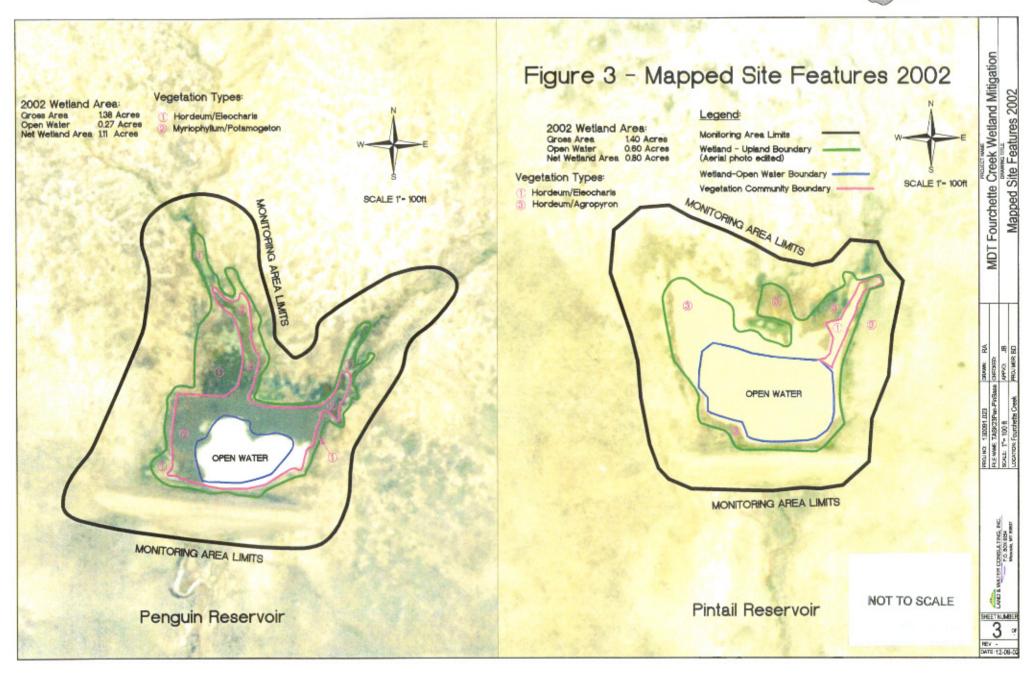
FIGURES 2 - 3

MDT Wetland Mitigation Monitoring Fourchette Creek Phillips County, Montana

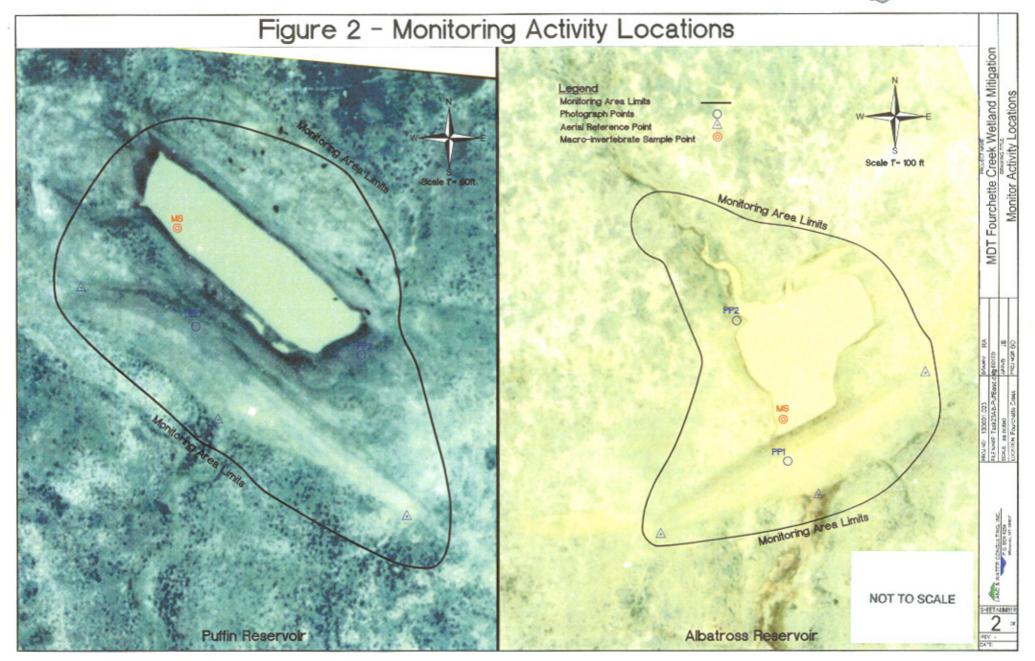




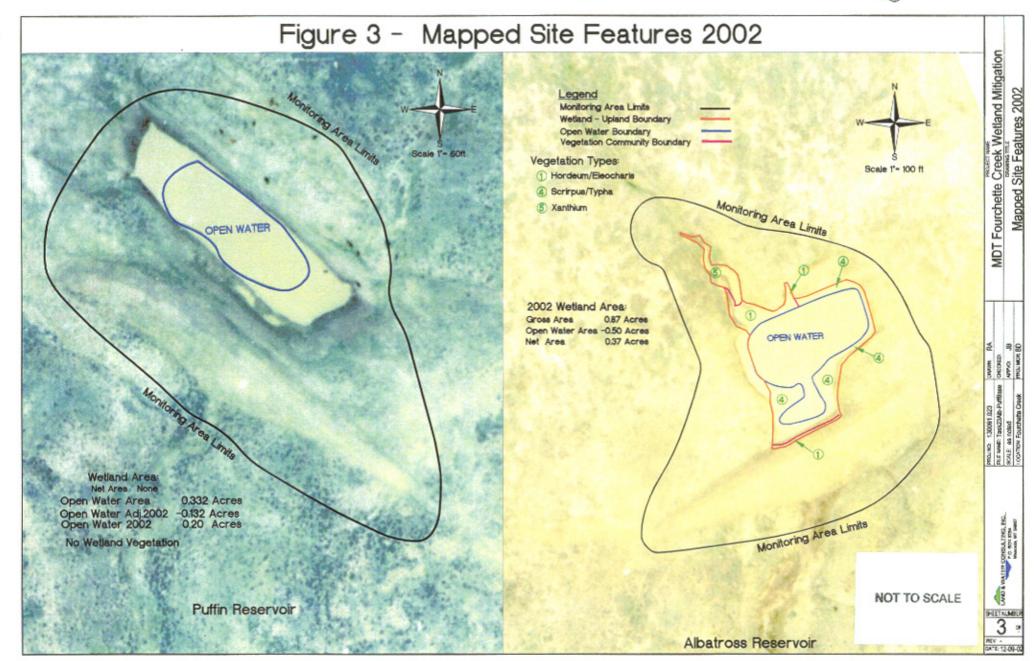


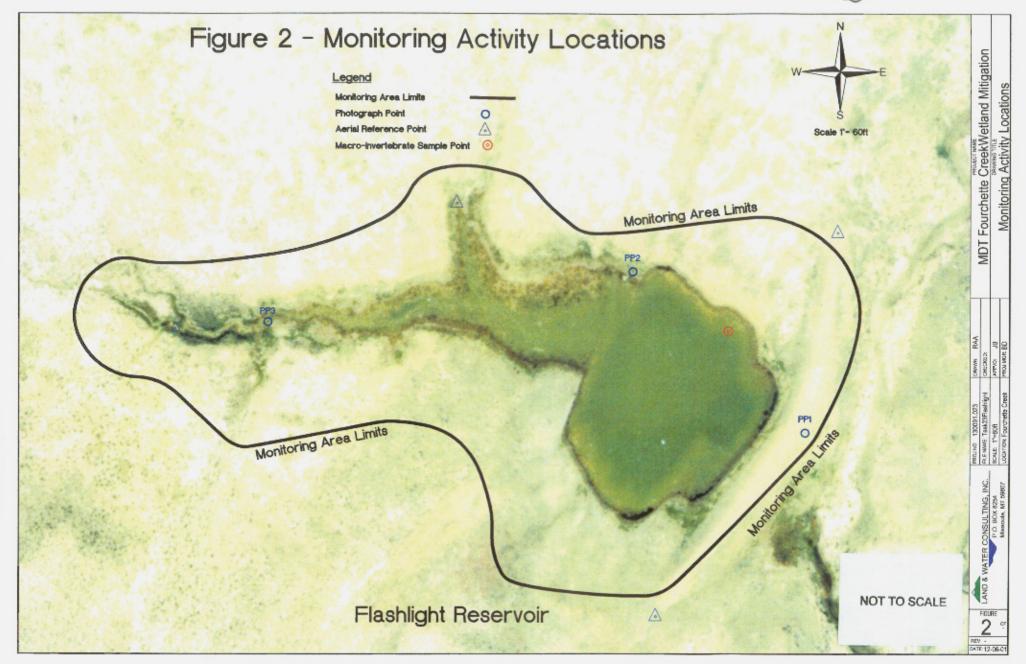




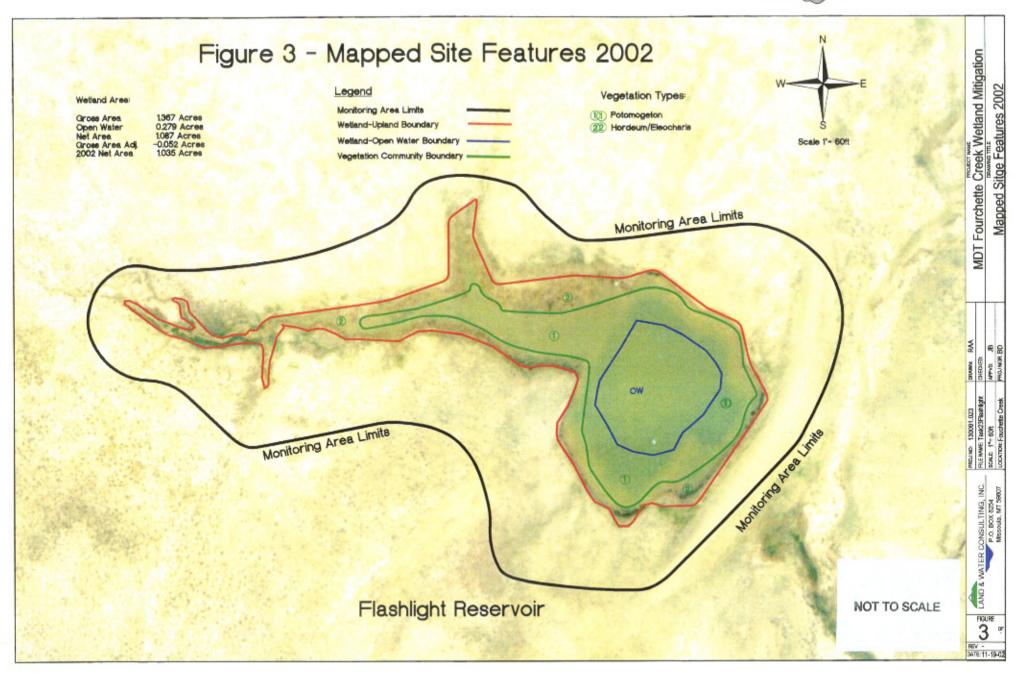












Appendix B

COMPLETED 2002 WETLAND MITIGATION SITE MONITORING FORM
COMPLETED 2002 BIRD SURVEY FORMS
COMPLETED 2002 WETLAND DELINEATION FORMS
COMPLETED 2002 FIELD AND FULL FUNCTIONAL
ASSESSMENT FORMS
MACROINVERTEBRATE DATA

MDT Wetland Mitigation Monitoring Fourchette Creek Phillips County, Montana



Location: PI Legal descri Weather Co Initial Evalu	ENGUIN ption: T_nditions:_ation Date	RESERVOIR _22NR_30E So _dry, cloudy e: _8 / 30 / 0	MD ection_19_ Ti Perso 1_ Visit #:	OT District: Gler me of Day:	ndive Miles 0700-0800 the assessmen ing Year:2 (2		_
			HY	DROLOGY			
Inundation: Assessment Depth at em If assessmer	Present_ area unde ergent ve nt area is n	er inundation: getation-open w not inundated an	Average dep 85% vater boundary: re the soils satu	rated w/in 12" o	of surface: Yes		and drift lines
Groundwa							
		esenter below ground					
	Vell #	Depth	Well #	Depth	Well #	Depth	
	, 011	2 0 p v v v	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,, 011		
X Map X Obse elevations (NA GPS	emergent rve extent drift lines, survey gr	erosion, vegeta coundwater mor	er during each s ation staining e nitoring wells lo	site visit and lootte.) ocations if prese	nt	of past surface votes ower than in 200	



		НҮ	DROLOGY			
ndation: Pres essment area oth at emerger ssessment are	Source:Precipient_X_ Absent under inundation:_ nt vegetation-open a is not inundated a f hydrology on site	Average deposition Average depos	:3_ <u>ft</u> rated w/in 12" o	of surface: Yes	s_XNo	lrift lines
	s: Present_ water below groun					
Well #		Well #	Depth	Well #	Depth	
Map emer Observe ex vations (drift l	gent vegetation-op ktent of surface wa ines, erosion, vege ey groundwater mo	ter during each station staining e	site visit and loote.) ocations if prese	ok for evidence ent	of past surface w lower than in 200	
	KODLEMIS: _IIC					
	KOBLEMS116					
	ROBLEMSITE					



Legal Weath Initial	ion: PINTAIL RI description: T22 ner Conditions:_d Evaluation Date: of evaluation area	2N_ R30E_ Sector, cloudy :8 /_30 /_01	ction_19_ Tin Person l_ Visit #: Land use surr	ne of Day:9:00- n(s) conducting 2 Monitoriounding wetlan	10:00 the assessment: ng Year:2 (20	Berglund	<u>.</u>
Inund Asses Depth If asse	ce Water Source ation: Presentsment area under at emergent veg essment area is no evidence of hydronic statement area.	X_ Absent_ inundation: 35 etation-open want ot inundated are	tionAverage depositionS_% ater boundary:_e the soils satur	_6"_ <u>ft</u> ated w/in 12" o	f surface: Yes_	XNo	
Moni	andwater toring wells: Pre rd depth of water Well #			Depth	Well#	Depth	
Addit	ional Activities	Checklist:					
X elevat _NA_ COM	_Map emergent v _Observe extent of ions (drift lines, of _GPS survey grown MENTS/PROBE photographs – th	of surface water erosion, vegetar oundwater moni LEMS: _Heav	r during each sition staining et itoring wells lovely grazed site.	ite visit and loo c.) cations if preser	nt levels much low	ver than observe	ed on 2001
	bserved at "max"				ated that surrace	water 13 1 2 1	



Locati Legal Weath Initial	et Name: Fourche ion: ALBATROS description: T22 der Conditions: _d Evaluation Date: f evaluation area	SS RESERVO 2N_ R29E_ Se lry, cloudy :8 / 30 / 0	IR MI ction_14_ Tin Person 1_ Visit #:	OT District: Gle ne of Day:10:00 n(s) conducting 2 Monitori	ndive Milep 0-11:00 the assessment: ng Year:2 (20	oost:_NA Berglund	
			НУГ	DROLOGY			
Inund Assess Depth If asse	ce Water Source ation: Present_X sment area under at emergent veg essment area is not evidence of hydrometric essment area.	Absent 7: inundation: 7: etation-open wort inundated are	Average deposition Average deposition ater boundary:_e the soils satur	_6"_ <u>ft</u> ated w/in 12" o	f surface: Yes_	_X_No	drift lines
Moni	ndwater toring wells: Pre	below ground	surface		*** 11.00		
	Well #	Depth	Well #	Depth	Well #	Depth	
X X elevat _NA_	ional Activities Map emergent v Observe extent of ions (drift lines, of GPS survey grown MENTS/PROBY allowed for devo	vegetation-open of surface wate erosion, vegeta oundwater mon LEMS: _Heav	r during each sition staining et itoring wells low vily grazed site.	ite visit and loo c.) cations if prese Water levels a	nt		



Locat Legal Weath Initial	ion: PUFFIN R description: Taner Conditions: Evaluation Dat	hette Creek ESERVOIR 22N_ R29E_ Se dry, cloudy e:8 /_30_/_0 ea:_2acres	MD' ection_10_ Ti Perso 1_ Visit #:	T District: Glen me of Day:11:0 on(s) conducting 2 Monitor	dive Milepo 00-12:00 g the assessment ring Year:2 (2	ost:_NA t:Berglund 2002)_	
			HY	DROLOGY			
Inund Asses Depth If asse	ation: Present_sment area undo at emergent ve essment area is:	rce:Precipita _X_ Absent er inundation: _2 egetation-open w not inundated ar drology on site (Average do 0_% rater boundary e the soils satu	:2" <u>ft</u> rated w/in 12" (of surface: Yes	NoX	
Moni		resent_ er below ground					
	Well #	Depth	Well #	Depth	Well #	Depth	
X X elevat NA COM establ	Observe extentions (drift lines _GPS survey grant MENTS/PRO) ishment adjacer	s Checklist: vegetation-oper t of surface wate , erosion, vegeta roundwater mon BLEMS: _Heav to pond. As n to flood uplands	or during each station staining e itoring wells low vily grazed site oted in 2001, s	site visit and loo etc.) ocations if prese e; virtually no e	ok for evidence ent mergent wetland	d developing; no	o vegetation



VEGETATION COMMUNITIES

Dominant Species

% Cover

Community No.:_1__ Community Title (main species):_MYR SPI / POT FOL_____

% Cover

Dominant Species

Dominant Species	% Cover	Dominant Species	% Cove
MYR SPI	>50		
POT FOL	>50		
ELO CAN	11-20		
SAG CUN	1-5		
COMMENTS/PROBLEMS: _Simil	lar to 2001		
Community No.:_2 Community Tit	ele (main species):_HC	OR JUB / ELE PAL	
Dominant Species	% Cover	Dominant Species	% Cove
HOR JUB	21-50 R	UM CRI	1-5
ELE PAL	21-50 JU	JN BAL	1-5
ELE ACI	11-20		
LLL ACI			
	1-5		
XAN STR		n 2002	
XAN STR COMMENTS/PROBLEMS:Run	nex and Juncus new i		
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit	mex and Juncus new in the last section in the	OR JUB / AGR	
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit Dominant Species	nex and Juncus new i		
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit Dominant Species HOR JUB	nex and Juncus new i	OR JUB / AGR	% Cove
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit Dominant Species HOR JUB AGR DAS	nex and Juncus new in the le (main species):_HC % Cover	OR JUB / AGR	
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit Dominant Species HOR JUB AGR DAS	nex and Juncus new i	OR JUB / AGR	
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit	nex and Juncus new in the le (main species):_HC % Cover	OR JUB / AGR	
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit Dominant Species HOR JUB AGR DAS	nex and Juncus new in the le (main species):_HC % Cover	OR JUB / AGR	
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit. Dominant Species HOR JUB AGR DAS AGR REP	nex and Juncus new in the le (main species):_HC % Cover	OR JUB / AGR	
COMMENTS/PROBLEMS:Run Community No.:_3 Community Tit. Dominant Species HOR JUB AGR DAS AGR REP	nex and Juncus new in the le (main species):_HC % Cover	OR JUB / AGR	



_X__Record and map vegetative communities on air photo

VEGETATION COMMUNITIES (continued)

Community No.:_4__ Community Title (main species):_SCI MAR / TYP LAT_____

Dominant Species	% Cover	Dominant Species	% Cover
SCI MAR	21-50	-	
TYP LAT	11-20		
ELE ACI	11-20		
XAN STR	6-10		
COMMENTS/PROBLEMS:New	in 2002 - at Alb	atross only	
,		_XAN STR	1 ov G
Dominant Species	% Cover	Dominant Species	% Cover
XAN STR	>50		
CHE ALB	21-50		
RUM CRI	6-10		
	6 10		
HOR JUB	6-10		
AGR REP	6-10		
	6-10	lbatross only	
AGR REP	6-10 ew in 2002 - at A		
AGR REP COMMENTS/PROBLEMS: No	6-10 ew in 2002 - at A		% Cover
AGR REP COMMENTS/PROBLEMS: No	6-10 ew in 2002 - at A	UPLAND	% Cover 11-20
AGR REP COMMENTS/PROBLEMS: No	ew in 2002 - at A le (main species): % Cover		
AGR REP COMMENTS/PROBLEMS: No	6-10 ew in 2002 - at A le (main species): % Cover 21-50		11-20
AGR REP COMMENTS/PROBLEMS: No	6-10 ew in 2002 - at A le (main species): % Cover 21-50 6-10		11-20



COMMENTS/PROBLEMS: ____varies site to site._____

COMPREHENSIVE VEGETATION LIST

Species	Vegetation Community	Species	Vegetation Community
	Number(s)		Number(s)
Agropyron dasystachyum	3,6	Juncus balticus	2,
Agropyron repens	3, 5, 6	Rumex crispus	2, 3, 5,
Agropyron smithii	6,	Melilotus officinalis	6
Alisma plantago-aquatica	1,	Chenopodium album	5, 6
Artemisia frigida	6	Scirpus americanus	2,4
Artemisia tridentata	6,	Thlaspi arvense Typha latifolia	6
Beckmannia syzigachne Bouteloua gracilis	6,	Atriplex argentea	4, 6
Chrysothamnus nauseosus	6	Sperugularia rubra	2
Cirsium arvense	6	Artemisia cana	6
Distichlis spicata	2, 6	Medicago lupulina	6
Echinochloa crusgalli	2		
Eleocharis acicularis	2, 4,		
Eleocharis palustris	2,		
Elodea canadensis	1,		
Erodium cicutarium	6		
Grindelia squarrosa	6,		
Gutierrezia sarothrae	6		
Helianthus annuus	6,		
Hordeum jubatum	2, 3, 5,		
Koeleria pyramidata	6		
Marsilea vestita	2		
Myriophyllum spicatum	1,		
Nasturtium officinale	1		
Opuntia sp.	6		
Polygonum lapathifolium	2,3		
Polygonum sp. (upland)	3		
Potamogeton foliosus	1,		
Puccinellia nuttalliana	2,3		
Sagittaria cuneata	1,		
Salix exigua	2		
Schizachyrium scoparium	6		
Scirpus acu u s	4		
Scirpus maritimus	4,		
Xanthium strumarium	2, 3, 4, 5,6		

COMMENTS/PROBLEMS: _Virtually no vegetation surrounding Puffin Reservoir				



PLANTED WOODY VEGETATION SURVIVAL

Species	Number Originally Planted	Number Observed	Mortality Causes
No woody species planted	Tanco		
The modely species primited			
COMMENTS/PROBLEMS:			
	 		



WILDLIFE

BIRDS

(Attach Bird Survey Field Forms)

Were man made nesting structures installed? Yn nesting structures being utilized? Yes No	Yes NoX_' o Do the nes	Type:l ting structure	How many? es need repa	Are irs? Yes	the No
	MALS AND HER	PTILES			
Species	Number Observed	Tracks	Indirect ind Scat	Burrows	Other
deer (Pintail, Flashlight, Albatross)	0	yes	Scat	Bullows	Other
western chorus frog (Penguin, Flashlight)	10	Jes			
northern leopard frog (Penguin)	6				
painted turtle (Penguin, Flashlight)	2				
coyote (Penguin)	0	yes			
, , ,		1			
_XMacroinvertebrate sampling (if required COMMENTS/PROBLEMS: _Fewer frogs of		ght and Peng	guin than we	ere observed	in 2001.



PHOTOGRAPHS

Using a camera with a 50 mm lenses and color film take photographs of the following permanent reference points listed in the checklist below. Record the direction of the photograph using a compass. (The first time at each site establish a permanent reference point by setting a ½ inch rebar or fencepost extending 2-3' above ground, survey the location with a resource grade GPS and mark the location on the air photo.) Checklist:

_x At up _x At	least one pholand use exist least one pholane	ach of the 4 cardinal directions surrounding oto showing upland use surrounding wetlands, take additional photos oto showing buffer surrounding wetland	d – if more than one
_NA C	ne photo from	m each end of vegetation transect showing t	transect
Location	Photo	Photograph Description	Compass
	Frame #		Reading
A		see photo sheets	
В			
C			
D E			
F			
G			
Н			
		GPS SURVEYING GPS survey the items on the checklist belo d recording rate. Record file numbers fore	w. Collect at least 3 location points with the
Checklist:			
_NA4- _NA St _NA Ph	6 landmarks i art and end p noto reference	vetland boundary recognizable on the air photo oints of vegetation transect(s) e points nonitoring well locations	
COMMENTS/PROBLEMS: No GPS data recorded in 2002 – adjustments made on aerial photo.			



WETLAND DELINEATION (Attach Corps of Engineers delineation forms) At each site conduct the items on the checklist below: Delineate wetlands according to the 1987 Army Corps manual. _X___ Delineate wetland-upland boundary on the air photo _NA__ Survey wetland-upland boundary with a resource grade GPS survey COMMENTS/PROBLEMS: __See data forms_____ **FUNCTIONAL ASSESSMENT** (Complete and attach full MDT Montana Wetland Assessment Method field forms; also attach abbreviated field forms, if used) COMMENTS/PROBLEMS: See data forms **MAINTENANCE** Were man-made nesting structures installed at this site? YES___ NO_X__ If yes, do they need to be repaired? YES____ NO____ If yes, describe problems below and indicate if any actions were taken to remedy the problems. Were man-made structures build or installed to impound water or control water flow into or out of the wetland? YES X NO If yes, are the structures working properly and in good working order? YES X NO If no, describe the problems below.



COMMENTS/PROBLEMS:

MDT WETLA	AND MONITO	ORING – VEGETATION TRANSECT	
Site: No Transects at this site Date	»:	Examiner: Transect #	
Approx. transect length:		rection from Start (Upland):	
Vegetation type A:		Vegetation type B:	
Length of transect in this type:	feet	Length of transect in this type:	feet
Species:	Cover:	Species:	Cover:
Total Vegetative Cover	::	Total Vegetative Cover:	
Vegetation type C:		Vegetation type D:	
Length of transect in this type:	feet	Length of transect in this type:	feet
Species:	Cover:	Species:	Cover:
		l 	
Total Vegetative Cover	:	Total Vegetative Cover:	



MDT WETLAND MONITORING – VEGETATION TRANSECT (back of form)

Cover Estim + = <1% 1 = 1-5% 2 = 6-10%	3 = 11-20% 4 = 21-50%	Indicator Class: + = Obligate - = Facultative/Wet 0 = Facultative	Source: P = Planted V = Volunteer
Percent of pe		% developing wetland vegetation – ex	xcluding dam/berm structures.
this location	with a standard metal t	Sencepost. Extend the imaginary transection	The transect should begin in the upland area. Permanently mark ct line towards the center of the wetland, ending at the 3 food depth ced. Mark this location with another metal fencepost.
			ninimum, establish a transect at the windward and leeward sides of ot inventory, representative portions of the wetland site.
Notes: No tra	nsects at this site		



BIRD SURVEY - FIELD DATA SHEET

Page__1_of_1__ Date:7/29/02

Survey Time: 0700-1200

SITE: Fourchette Reserve

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
Penguin Reservoir				•			
killdeer	4	F	US				
Pintail Reservoir							
killdeer	6	F	US				
willet	1	F	MA				
Flashlight Reservoir							
gadwall	1	F	OW				
killdeer	6	F	US				
willet	1	F	MA				
Albatross Reservoir							
avocet	2 pr	F	AB				
savannah sparrow	6	F	UP				
Puffin Reservoir							
None							
Notas Many agy D	ffi.m						
Notes: Many cows at Po	ullill						

 $\textbf{Behavior} \colon BP - one \ of \ a \ breeding \ pair; \ BD - breeding \ display; \ F - foraging; \ FO - flyover; \ L - loafing; \ N - nesting$

 $\label{eq:habitat: AB-aquatic bed; FO-forested; I-island; MA-marsh; MF-mud flat; OW-open water; SS-scrub/shrub; UP-upland buffer; WM-wet meadow, US-unconsolidated shoreline}$





Westland Mid-	on Monitoring Project							*********		
	on Monitoring Project Associatos, Inc.									
	Water Consulting	Project Name	peffin	fissbilight	penguin	albatross	postin	flashlight	penguin	albatross
	and 2002			12.73	Program		Politi		Pongam	anom/ess
		Date	2901	2901	2801	2901	7/29/2002	Jul-92	Jul-02	Jul-02
Coelesterata Parbellaria		Hydra							1	
Oligochaeta	Enchytraeidae	Dugezia Enchytrueidae		1						
Origonia	Lumbriculidae	Lambriculidae							-	
	Naididae	Chaetogaster								
		Nats elinguis								
		Nasz variabilis				10				
		Ophadonas surpentina								
	Tubificidae	Tubificidae - immature								
Hirudines.	-	Linnodrilus hoffmusteri Mooreobdella microstoma								
ISH GUIDER	+	Nephelopsis			3	1			.7	
		Helobdella stagnalis								
	1	Helobdella	-	***************************************						
		Glossiphonia								
		Тhегопусов								-
Bivalvia	Sphaeriidae	Spharman						2	1	
Gastropoda	Lymnaridae	Fossaria				1				
	Physidae Planorbidae	Physic		1	16				7	
	Planorbedac	Gyraulus Heltsoma								
		Pianorbella				1			-	-
Crustacea	Cladocera	Cladocera			7	The same of the sa	4	1	3	
	Copepoda	Culumoodn				12		-		
		Cyclopoids							2	
	Ostracoda	Ostracoda					2			
	Amphipoda	Gammanus		1	1					
	Januari-	Hyalelia azteca Caecidotea		7	37	9		11	27	
	ksopoda Decupoda	Circonactes								
Acarina		Acari			1			1	10	
Odousta.	Acelmidae	Anax penties						,	10	
	Libellulidae	Libellulidac-early instar								
		Sympetrion								
	Coenagrionidae	Coenagricaidae-early instar		4	45			3	22	
		Enallagma								
Ephemeroptera	Lestidae Baetidae	Lestes Bastis tripaudatus								
cpaeuseropeera	Isaetroae	Callebantis			3			2		
	1	Centrophilos								
	Caesidae	Coenta			1			1	3	the state of the s
	Ephemerellidae	Ephemereila	***************************************							
	Heptageniidae	Олудия								
	-	Nexe								
	Leptophlebiidae	Paraleptophlebia		-						
Homoptera.	Ameletidae Corixidae	Ameletus Corixidae - inmature				20	5			
riginopiera	Controles	Cornella tarsalis			6	20	, ,		1	
	-	Fitzpetrocoruxa								
		Palmacorina buenat								
		Sigara			2	1	1			
****		Trichovorixa			NAME OF A PARTY OF THE PARTY OF					
	Nepidae	Ranatra								
Plecoptera	Notonectidae Chloroperlidae	Notanecta Sweltza	3	3	7				3	
riecoptera	Perlodidae	Skwala								
Trichoptera	Brackycentridae	Brachycentrux - early instar								
	Hydroptilidae	Hydroptilidae - pupa				Book of the Control of the Book	a the thirt is the second and a second			
		Hydroptilidae - pupa Hydroptila								
	Lepidostomatidae	Lepidastoma				1				
	Leptoceridae	Leptoceridae - early instar								
	+	Cenaclea								
		Mystacides Nactopsyche		1						
	1	Nodes								
	Limnephilidae	Psychoglypha suborealis								
Coleoptera	Chysomelidae	Chrysospetidae								
	Curculiouidse	Bagener								
	Dytiscidae	Actions								
		Dytiscidae - early instar larvae		****************						
	-	Hydroporinae - early instar larvae								
	+	Hygrotus Liodesma								
	1	Laccophilus								
		Neoporsa								
		Oreodytex				-terberari			.,	
	1	Rhantus	-							
		Stichtotarsus								
	Elmidse	Duberaphia								
		Heterlinouus Lara avara								
		Optrogrand								
	1	Optroservus Zaitzevia								
	Haliplidae	Haliphis			1			1	2	
	1	Peltodytes								
	Hydrophilidae	Hydrophilidae - early instar larvae	-							
		Berosus		1	4	6	3			
		Helophonus								
	-	Hydrobeus								
		Hydrochara								
	+	Laccobeux								
Diptera	Athericidae	Tropisternus Atherix								
	Cerutopogonidae	Bezna/Falpomyia								
Married State of the Control of the	1	Dasyhelea								
	Chaoboridae Culicidae	Chaoponus Anopheles					41			



		Clubex								
	Dixidae	Dexella								
	Dolichopodidae	Dolichopodidae						****		
	Empididae	Сілюсяна								
	Ephydridae Muscidae	Ephydridae Muscidae	-						1	
	Pelecorhynchidae	Olutope								
***	Psychodidae	Pericoma								
	Simuliidae	Streatture								
	Sciomyzidae	Sciomyzidae								
	Strationyidae	Odontompia								
	Tubanidae	Tabanidae								
	Tipulidae	Hexatoma								
	Chironomidae	Typida Ablabismysa			***************************************					
	Casrosomruse	Acriostopia								
		Camptocladius								
		СМ гоманых					7			
		Cladotanytarna							1	
		Corynoneura								
		Cricotopus Bicinetus Gr.								
		Cricotopus (Cricotopus) Gr.							7	1
		Cricotopus nostococladius								
*		Cryptotevalipus Diamesa								and the same of th
		Dicratendipez								
		Einfeldia			13				4.0	
		Endoshironomacı			32					
		Labrundinia								
		Micropsectra								
		Microtendipes		1	19			4	4	1
		Odontomeza Orthooladus annectenz	-		1			11	8	9
		Pagantia						***		
	 	Parachironomis								
		Paracladopelma								
	-	Paramerina								
		Parametriocnemus								
		Paratanytarnus								
		Paratendipes								
		Phaenopoectra							2	
		Protypeditum Procladus			-			-,	1	
		Prociatives Prectrocladus elatics	_		1					
	-	Parctrocladus virnalis								1
		Pacetrolanypus								
		Panadochironomus								
		Stoktochtronomus							10000	
		Тапурыя								
		Такувагзыз								
		Thetnemanniel/a						1		
		Tretenia								
		Total	3	22	202	62	63	47	114	25
	·	Total .	-	-						
		1								
		Total taxa	1	16	20			14		- 11
	-	POET	0		4			4	2	1
		Chiropomidae taxa	0		5	1 4	A STATE OF THE PARTY OF THE PAR	4		
		Crustacea taxa + Mollusca taxa % Chironomidae	0.00%		32.67%	1.61%				
	+	Orthocladinae/Chironomidae	#DIV/0!	0.60	0.03					0.80
		%Amphipoda	0.00%		18.81%			34,04%	23.68%	12.00%
		%Crustacea + %Molhuca	0.00%		30.20%		9.52%	40.43%	35.09%	16.00%
		HBI	11.00	7.36	7.50	7.52				7.24
		%Dominant taxon	100.00%		22.28%					36.00%
		%Collector-Gatherers	0.00%		45.54%					
				0.00%	3.47%	0.00%	6.35%	2.13%	3.51%	0.00%
		%Filterers	0.00%	0.00.0						
		%Filterers	0.00%							
		%Filterers Scores (2002 criteria)			3			3	5	3
		%Filterers Scores (2002 criteria) Total taxa	1			1	1			3
		%Filterers Scores (2002 criteria)		1 3	3 5 5 3			3	1 3	
		%Filterers Scores (2002 criteria) Total tusa POET	1 1 1 1	1 3 1	5	1	1	3	1 3 5	1
		%Filterers Scores (2002 criteria) Total taxa POET Chironomidae taxa Crustacen taxa + Mollusca taxa % Chironomidae	1 1 1 1 1 5	1 3 1 1 5	5 3 5 3	5 5	1 1	5 3 5	1 3 5	1
		%Filterers Scores (2002 criteria) Total taxa POET Chironomidae taxa Crustacen taxa + Mollusca taxa % Chironomidae Orthocladinae/Chironomidae	1 1 1 1 1 5	1 3 1 1 5	5 3 5 3	1 5 3	1 1 5	3 3 5	1 3 5 3	
		%Filterers Scores (2002 criteria) Total taxa POET Chironomidae taxa Crustacea taxa + Mollusca taxa % Chironomidae Orthocladinae/Chironomidae %Amphipoda	1 1 1 1 1 5 4 5	1 3 1 1 5 1	5 3 5 3 1 1	1 5 5 1 3	1 1 5 1	3 3 5 3 5 1	3 3 5 3 5 3	3
		%4Filterers Scores (2002 criteria) Total taxa POST Chironomidae taxa Crustacea taxa + Mollusca taxa % Chironomidae Orthocladiinae/Chironomidae %Amphipoda %Crustacea + %4Mollusca	1 1 1 1 1 5 1 5 5	1 3 1 1 5 1 1 3	5 3 5 3 1 1 3 5	1 5 5 1 3 3	1 1 5 1 5 5	3 3 5 3 3 5 1	1 3 5 3 3 3	3
		%Filterers Scores (2002 criteria) Total taxa POET Chircontnidae taxa Crustacen taxa + Mollusca taxa % Chircontnidae Orthocladiinae/Chircontnidae % Amphipoda % Crustacea + % Mollusca HBI	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 3 5 3 1 3 3 5	1 5 5 1 3 3 3	1 1 5 1 5 5 1	5 3 5 3 5 1 1 3	1 3 5 3 5 3 3	3
		%Filterers Scores (2002 criteria) Total taxa POET Chirconomidae taxa Crustacen taxa + Mollusca taxa % Chirconomidae Orthocladiinae/Chirconomidae %Amphipoda %Crustaces + %Mollusca HBI %Dominant taxon	1 1 1 1 1 1 1 1 1 5 5 1 1 5 5 5 5 1 1 1 1 1 1 1 1	1 3 1 1 5 5 1 1 1 3 3 3	5 3 5 3 1 3 5 5 3	1 5 5 1 3 3 3 3	1 1 3 5 4 5 3	5 3 5 3 5 1 3 3 5	1 3 5 3 3 3 3 5	3
		%4Filterers Scores (2002 criteria) Total taxa POST Chironomidae taxa Crusfacea taxa + Mollusca taxa % Chironomidae Orthocladiinae/Chironomidae %Anaphipoda %Crusfacea + Schollusca HBI %Doninant taxon %Collector-Onfierers	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 3 1 1 1 1 1 1 3 3 3 3 3	5 3 5 3 1 3 3 5	1 5 5 1 3 3 3 3 3 3	1 1 5 4 5 5 1 1 1	5 3 5 3 5 1 3 5 5	1 3 5 3 5 3 3 3 3 5	3 3 3 3
		%Filterers Scores (2002 criteria) Total taxa POET Chirconomidae taxa Crustacen taxa + Mollusca taxa % Chirconomidae Orthocladiinae/Chirconomidae %Amphipoda %Crustaces + %Mollusca HBI %Dominant taxon	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 3 1 1 1 1 1 1 3 3 3 3 3	5 3 5 3 1 1 3 5 5	1 5 5 1 3 3 3 3 3 3	1 1 5 4 5 5 1 1 1	5 3 5 3 5 1 3 5 5	1 3 5 3 5 3 3 3 5 5 5 5 3 3 3 3 3 3 3 3	3 3 3 3 5 3 3

Investigators: Berglund	e Fransportat	ion	Project No: Task 23	Date: 29 County: Ph State: Mo Plot ID: 1		
Do Normal Circumstances exist on the sit is the site significantly disturbed (Atypica is the area a potential Problem Area? (If needed, explain on the reverse side)		:)? Y	es No Community ID: EM/ Transect ID: NA Field Location: Fleshight Reservoir	AB		
/EGETATION	_	_	gion No. 4)			
Dominant Plant Species(Latin/Common)			Plant Species(Latin/Common)		Stratum	
Hordeum jubatum	Herb	FACW	Myriophyllum spicatum		Herb	OBL
Barley,Fox-Tall			Water-Milfoll, Eurasian			
Eleocharis palustris	Herb	OBL	Scirpus acutus		Herb	OBF
Spikerush,Creeping			Bulrush, Hard-Stern			
Potamogeton follosus	Herb	OBL	Xanthium strumarlum		Herb	FAC
Pondweed, Leafy			Cockle-Bur,Rough			
Distichlis spicata	Herb	NI	Nasturtium officinale		Herb	OBL
Saltgrass, Inland			Water-Cress,True			
Eleocharis acicularis	Herb	OBL	Puccinellia nuttalliana		Herb	OBL
Spikerush,Least			Grass, Nuttali's Alkali			
Sagittaria cuneata	Herb	OBL	Rumex crispus		Herb	FACW
Arrow-Head, Northern			Dock, Curly			
Scirpus maritimus	Herb	NI	Scirpus americanus		Herb	OBL
Bulrush, Saltmarsh		1	Bulrush,Olney's		1	
Percent of Dominant Species that are OB	L, FACW o	r FAC:	FAC Neutral: 11/11 = 100.			
Percent of Dominant Species that are OB (excluding FAC-) 12/12 = 100.00%	L, FACW o	r FAC:	FAC Neutral: 11/11 = 100. Numeric Index: 16/12 = 1			
Percent of Dominant Species that are OB	L, FACW o	r FAC:				
Percent of Dominant Species that are OB (excluding FAC-) 12/12 = 100.00% Remarks:				1.33		
Percent of Dominant Species that are OB (excluding FAC-) 12/12 = 100.00% Remarks: HYDROLOGY YES Recorded Data(Describe in Remar NO Stream, Lake or Tide Gauge YES Aerial Photographs NO Other			Numeric Index: 18/12 = 1	nches		
Percent of Dominant Species that are OB (excluding FAC-) 12/12 = 100.00% Remarks: HYDROLOGY YES Recorded Data(Describe in Remar NO Stream, Lake or Tide Gauge YES Aerial Photographs NO Other NO No Recorded Data	ks): = 48 (in.)		Index: 18/12 = 1 Index: 18/12	nches	2 Inches	
Percent of Dominant Species that are OB (excluding FAC-) 12/12 = 100.00% Remarks: HYDROLOGY YES Recorded Data(Describe in Remar NO Stream, Lake or Tide Gauge YES Aerial Photographs NO Other NO No Recorded Data Field Observations	ks):		Numeric Index: 18/12 = 1	nches	2 Inches	

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DATA FORM ROUTINE WETLAND DETERMINATION (1987 COE Wetlands Delineation Manual)

	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Applicant/Owner:	Fourchette Creek Reserve Montana Department of Transportation Berglund	Project No: Task 23	Date: 29-Jul-2002 County: Phillips State: Montana Plot ID: 1
SOILS			
Map Unit Name (S	eries and Phase): Unmapped		

Depth inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mot Abundance		Texture, Concretions, Structure, etc
10	В	2.5Y4/2	N/A	N/A	N/A	Clay
10	В	2.5Y4/3	2.5Y5/6	Common	Faint	Clay
10	В	2.5Y4/2	2.5Y5/6	Few	Faint	Clay
	NO Sulfic	Moisture Regime	Colors	NO Orga NO Lista NO Lista	nic Streak ad on Loca	content in Surface Layer in Sandy Solit ing in Sandy Solis il Hydric Solis List anal Hydric Solis List

tydrophytic Vegetation Present? Wetland Hydrology Present?	(es) No	Is the Sampling Point within the Wetland?	(Pes) No
Hydric Soile Present?	(Yes) No		
	and the same of th		
emarks:			
	urrounding and within	Flashlight Reservoir.	
Remarks: Emergent / aquatic bed communities so	urrounding and within	Flashlight Reservoir.	
	urrounding and within	Flashlight Reservoir.	4
	urrounding and within	Flashlight Reservoir.	· ·
	urrounding and within	Flashlight Reservoir.	a .

Page 2 of 2 We/Formⁱⁿ

Project No: Task 23

Date: 29-Jul-2002

Project/Site:

Fourchette Creek Reserve

Do Normal Circumstances exist on the sil is the site significantly disturbed (Atypica is the area a potential Problem Area? (If needed, explain on the reverse side)		15 1	es No Community ID: EM/AB es No Transect ID: NA field Location: Penguin Reservoir		
VEGETATION	(1	JSFWS R	egion No. 4)		
Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicato
Hordeum jubatum	Herb	FACW	Potamogeton foliosus	Herb	OBL
Barley,Fox-Tail			Pondweed, Leafy		
Xanthlum strumarium	Herb	FAC	Elodea canadensis	Herb	OBL
Cockle-Bur,Rough			Water-Weed,Broad		
Eleocharis palustris	Herb	OBL	Myriophyllum spicatum	Herb	OBL
Spikerush, Creeping			Water-Miffoil, Eurasian		
Eleocharis acicularis	Herb	OBL	Sagittaria cuneata	Herb	OBL
Spikerush, Least			Arrow-Head, Northern		
Beckmannia syzigachne	Herb	OBL	Rumex crispus	Herb	FACW
Sloughgrass, American			Dock, Curly		_
Polygonum lapathifolium	Herb	OBL	Juncus balticus	Herb	OBL
Willow-Weed			Rush,Baltic		
Percent of Dominant Species that are OB	L, FACW o	FAC:	FAC Neutral: 11/11 = 100.00% Numeric Index: 16/12 = 1.33		
Percent of Dominant Species that are OB (excluding FAC-) 12/12 = 100.00% Remarks:	L, FACW o	r FAC:	FAC Neutral: 11/11 = 100.00% Numeric Index: 16/12 = 1.33		
(excluding FAC-) 12/12 = 100.00%	L, FACW o	r FAC:			
(excluding FAC-) 12/12 = 100.00% Remarks:	ks):		Numeric Index: 16/12 = 1.33 Iland Hydrology Indicators Primary Indicators YES Inundated YES Saturated in Upper 12 Inches YES Water Marks NO Prift Lines NO Sediment Deposits YES Drainage Patterns in Wetlands Secondary Indicators NO Oxidized Root Channels in Upper 19 Indicators	er 12 Inches	
(excluding FAC-) 12/12 = 100.00% Remarks: HYDROLOGY YES Recorded Data(Describe in Remarks) NO Stream, Lake or Tide Gauge YES Aerial Photographs NO Other NO No Recorded Data Field Observations	rks}:		Numeric Index: 16/12 = 1.33 Itland Hydrology Indicators Primary Indicators YES Inundated YES Saturated in Upper 12 Inches YES Water Marks NO Drift Lines NO Sediment Deposits YES Drainage Patterns in Wetlands Secondary Indicators	er 12 Inches	

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WetForm³⁷¹



DATA FORM ROUTINE WETLAND DETERMINATION (1987 COE Wetlands Delineation Manual)

Applican	Project/Site: Fourchette Creek Reserve Applicant/Owner: Montana Department of Transportation nvestigators: Berglund						Date: 29-Jul-2002 County: Phillips State: Montana Plot ID: 2
SOILS							
Map Sym	bol: 250E ny (Subgroup)	Drainage Class:	Bascovey clay PD (?)			ped Hydric In ervations Cor	clusion? nfirm Mapped Type? (Yes) No
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Abundance		Texture, Co	ncretions, Structure, etc
10	В	10YR4/2	10YR5/8	Common	Distinct	Clay	
Remarks Sample at	NO Reduci YES Gleyed	Epipedon		NO High NO Orga NO Lists NO Lists	anic Streak ed on Loca ed on Natio	Content in Sur ding In Sandy Il Hydric Soils onal Hydric So in Remarks)	List
WETLANI	D DETERMINA	ATION				-	
Wetland	tic Vegetation Hydrology Presides Present?		No No	Is the Sam	pling Point v	within the Wet	land? (Yes) No
Remarks EM / AB or		enguin Reservoir.					

Page 2 of 2 WetForm^{bm}

Applicant/Owner; Montana Department of Investigators: Berglund	erve of Transportati	ion	Project No: Task 23	County: Ph	-Jul-2002 illips intana	
Do Normal Circumstances exist on the is the site significantly disturbed (Atypi is the area a potential Problem Area? (if needed, explain on the reverse side	cal Situation:	:13	es No Community ID: EM Transect ID: NA Field Location: Pintail Reservoir			
VEGETATION		USFWS Re	egion No. 4)			
Dominant Plant Species(Latin/Common	Stratum		Plant Species(Latin/Common)			Indicato
Hordeum jubatum	Herb	FACW	Agropyron dasystachyum		Herb	FAC
Barley,Fox-Tail			Wheatgrass, Thick-Spike			
Echinochioa crusgalii	Herb	FACW	Agropyron repens		Herb	FAC
Grass,Barnyard			Quackgrass			
Eleocharis palustris	Herb	OBL	Polygonum lapathifolium		Herb	OBL
Spikerush, Creeping			Willow-Weed			
Distichlis spicata	Herb	NI	Scirpus americanus		Herb	OBL
Saltgrass, Inland	7—		Bulrush, Oiney's			
	_	_			-	-
	\pm	-			_	_
	7—	-			-	-
		I			I	
Percent of Dominant Species that are C (excluding FAC-) 7/7 = 100.00% Remarks: Scattered wetland species beginning to emerge			FAC Neutral: 5/5 = 100 Numeric Index: 13/7 = ssin where surface water levels have d	1.86	001. No aq	uatic veg.
(excluding FAC-) 7/7 = 100.00% Remarks:			Numeric Index: 13/7 =	1.86	001. No aq	uatic veg
(excluding FAC-) 7/7 = 100.00% Remarks: Scattered wetfand species beginning to emerge	within the impo	oundment be	Numeric Index: 13/7 = ssin where surface water levels have d land Hydrology Indicators Primary Indicators No Inundated YES Saturated in Upper 12	1.86 Propped from 20	001. No aq	uatic veg
(excluding FAC-) 7/7 = 100.00% Remarks: Scattered wettand species beginning to emerge HYDROLOGY YES Recorded Data(Describe in Rem NO Stream, Lake or Tide Gaug YES Aerial Photographs	within the impo	oundment be	Numeric Index: 13/7 = ssin where surface water levels have d land Hydrology Indicators Primary Indicators NO Inundated YES Saturated in Upper 12 YES Water Marks NO Drift Lines	1.86 Propped from 20	001. No aq	uartic veg
(excluding FAC-) 7/7 = 100.00% Remarks: Scattered wettand species beginning to emerge HYDROLOGY YES Recorded Data(Describe in Rem NO Stream, Lake or Tide Gaug YES Aerial Photographs NO Other	within the impo	oundment be	Numeric Index: 13/7 = ssin where surface water levels have d land Hydrology Indicators Primary Indicators NO Indicators NO Drift Lines NO Sediment Deposits NO Drainage Patterns in W	1.86 Propped from 20	001. No aq	uatic veg
(excluding FAC-) 7/7 = 100.00% Remarks: Scattered wetfand species beginning to emerge HYDROLOGY YES Recorded Data(Describe in Rem NO Stream, Lake or Tide Gaug YES Aerial Photographs NO Other NO No Recorded Data Field Observations Depth of Surface Water:	within the important of	oundment be	Numeric Index: 13/7 = ssin where surface water levels have d land Hydrology Indicators Primary Indicators NO Inundated YES Saturated in Upper 12 YES Water Marks NO Drift Lines NO Sediment Deposits	1.86 Propped from 20 Inches		uatic veg
(excluding FAC-) 7/7 = 100.00% Remarks: Scattered wetfand species beginning to emerge HYDROLOGY YES Recorded Data(Describe in Rem NO Stream, Lake or Tide Gaug YES Aerial Photographs NO Other NO No Recorded Data Field Observations	e within the impo	Wet	Numeric Index: 13/7 = ssin where surface water levels have d stand Hydrology Indicators Primary Indicators NO Inundated YES Saturated in Upper 12: YES Water Marks NO Drift Lines NO Sediment Deposits NO Drainage Patterns in W Secondary Indicators NO Oxidized Root Channe	Inches Vetlands Is in Upper 1		uatic veg

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DATA FORM ROUTINE WETLAND DETERMINATION (1987 COF Wetlands Delineation Manual

Project/Site: Fourchette Creek Reserve Applicant/Owner: Montana Department of Transportation Berglund 30ILS					Project N	o: Task 23	Date: 29-Jul-2002 County: Phillips State: Montana Plot ID: 3
SOILS							
Map Sym	bol: NA ny (Subgrou	es and Phase): Drainage Class: p): Unknown	Unmapped Unknown			ped Hydric In ervations Co	oclusion? nfirm Mapped Type? Yes No
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast Texture			ncretions, Structure, etc
10	8	10YR4/2	10YR5/8	Common	Distinct	Clay	
10	8	10YR4/2	10YR5/6	Few	Faint	Clay	
10	A/B	5GY4/1	N/A	N/A	N/A	Clay	
	YES Gleyes: nples slong fri	cing Conditions ad or Low Chroma inge area. Third in dra		NO Oth	er (Explain	onal Hydric S In Remarks)	
Hydrophy	DETERMI	on Present? (Pes		is the Sam	pling Point	within the Wet	tland? (es) No
	Hydrology Polis Present?		No No				
Explanat	unity at Pintali		al Circumstances? Area Type b): hydrok	Atypical S	ituation?	Potential Pro	turbid. bblem Area ? ason, but is reduced or lacking during

Page 2 of 2 WelFormtm

Project/Site: Fourchette Creek Reserve Applicant/Owner: Montana Department of Transportation Investigators: Berglund Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation:)? Yes No Field Location: (If needed, explain on the reverse side) VEGETATION (USFWS Region No. 4) Dominant Plant Species(Latin/Common) Stratum Indicator Plant Species(Latin/Common Eleocharis palustris Spikerush,Creeping Herb OBL Typha latifolis Cattail,Broad-Leaf Hordeum jubatum Herb FACW Rumex orispus Dock,Curry Xanthlum strumarium Cockle-Bur,Rough Herb FAC Eleocharis acicularis Spikerush,Least	
Is the site significantly disturbed (Atypical Situation:)? Yes No Field Location: (If needed, explain on the reverse side) VEGETATION Dominant Plant Species(Latin/Common) Eleocharis paiustris Spikerush, Creeping Herb Herb FACW Rumex crispus Dock, Curty Xanthium strumarium Transect ID: N/Field Location: Albatross Reservoir (USFWS Region No. 4) Full Latin/Common Field Location: Albatross Reservoir (USFWS Region No. 4) For DBL Typha latifolia Cattail, Broad-Leaf FACW Barley, Fox-Tail Transect ID: N/Field Location: Albatross Reservoir Field Location: Albatross Reservoir Albatross Reservoir Field Location: Albatross Reservoir Field Location: Albatross Reservoir CusFWS Region No. 4) Fact Spikerush, Common Factorium Spikerush, Common Factorium Spikerush, Broad-Leaf Factorium Spikerush, Broad	n) Stratum Indi
Dominant Plant Species(Latin/Common) Stratum Indicator Plant Species(Latin/Common Eleocharis palustris Herb OBL Typha Iatifolia Typha Iatifolia Cattail, Brofagu-Leaf Herb FACW Rumex crispus Dock, Curfy Xanthlum strumarium Herb FAC Eleocharis acicularis Eleocharis Eleoch	Herb OBI
Eleocharis palustris Herb OBL Typha latifolia	Herb OBI
Spikerush, Creeping Cattail, Broad-Leaf Hordeum Jubstum Herb FACW Rumex crispus Barley, Fox-Tail Dock, Curty Xanthlum strumarium Herb FAC Eleocharis acicularis	
Hordeum jubatum Herb FACW Rumex crispus Barley,Fox-Tail Dock,Curty Xanthlum strumarium Herb FAC Eleocharis acicularis	Herb FAC
Barley,Fox-Tail Dock,Curfy Xanthlum strumarium Herb FAC Eleocharis acicularis	Herb FAC
Xanthlum strumarium Herb FAC Eleocharis acicularis	
Cockle-Bur,Rough Spikerush,Least	Herb OBI
Marsilea vestite Herb OBL Cirsium arvense	Herb FAC
Fern, Hairy Water Thistle, Creeping	
Scirpus maritimus Herb Ni	
Bulrush, Saltmarsh	
Percent of Dominant Species that are OBL, FACW or FAC: FAC Neutral: 6/7 = 85 (excluding FAC-) 7/8 = 87.50% Numeric Index: 15/8	
Remarks: 1 saltx exigue seedling. Westand veg is emerging along fringe where water levels have receded in comparison timpoundment. HYDROLOGY	to 2001. No aquatic veg in
YES Recorded Data(Describe in Remarks): NO Stream, Lake or Tide Gauge YES Aerial Photographs Wetland Hydrology Indicators Primary Indicators NO Inundated	12 Inches
NO Other YES Saturated in Upper 13	
NO Other YES Saturated in Upper 13 NO No Recorded Data YES Water Marks NO Drift Lines NO Drift Lines	
NO Other YES Saturated in Upper 1: YES Water Marks NO No Recorded Data NO Drift Lines NO Sediment Deposits NO Drainage Patterns in	Wetlands
NO Other NO No Recorded Data Field Observations Depth of Surface Water: NO Other YES Saturated in Upper 12 YES Water Marks NO Drift Lines NO Sediment Deposits NO Drainage Patterns in Secondary Indicators NO Oxidized Root Chann	nels in Upper 12 Inches
NO Other NO No Recorded Data NO No Recorded Data Field Observations NO Description NO Secondary Indicators NO Description Secondary Indicators	nels in Upper 12 Inches

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WelFormitm

DATA FORM ROUTINE WETLAND DETERMINATION (1987 COE Wetlands Delineation Manual)

Applican					Project N	o: Task 23	Date: 29-Jul-2002 County: Phillips State: Montana Plot ID: 4			
SOILS										
Map Sym	bol: 925C ly (Subgrou	es and Phase): Drainage Class: p): Unknown	Sunburst PD (?)			ped Hydric In ervations Co	nclusion? nnfirm Mapped Type? Yes No			
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		ottle ce/Contrast	Texture, Co	oncretions, Structure, etc			
10	В	10YR4/2	10YR5/8	Few	Distinct	Clay				
10	В	2.5Y4/1	10YR4/6	N/A	N/A	Clay				
Hydric Soil Indicators: NO Histosol NO High Organic Content in Surface Layer in Sandy Soils NO Surface Layer in Sandy Soils NO Cypanic Streaking in Sandy Soils NO Listed on Local Hydric Soils List NO Reducing Conditions YES Gleyed or Low Chroma Colors Remarks: 1st Sample in NW *arm*. Second in drawdown zone.										
Hydrophy Wetland	tic Vegetation Hydrology Pills Present?	on Present? (es) No	Is the San	npling Point v	within the Wer	tland? (es) No			
Remarks Wetland fri		ong most of shoreline	in drawdown area.							
The site is	lon for resp possibly a se- ing later grow	asonal wetland (Proble	al Circumstances? em Area Type b); hyd		Situation ? present durin		oblem Area ? g season, but may be reduced or			

WetForm** Page 2 of 2

Project/Site: Fourchette Creek Reser Applicant/Owner: Montana Department of Investigators: Berglund			oject No: Task 23	County: P State: M Plot ID: 5	9-Jul-2002 hillips lontana	
Do Normal Circumstances exist on the si is the site significantly disturbed (Atypicals the area a potential Problem Area? (If needed, explain on the reverse side)	al Situation:)?	Yes No Yes No	Community ID: ON Transect ID: NA Field Location: Puffin Reservoir			
VEGETATION	The second livery is not a second	WS Region No.	NAME AND ADDRESS OF THE OWNER, WHEN		-	
Dominant Plant Species(Latin/Common)	Stratum Inc	dicator Plant Sp	ecies(Latin/Common)	Stratum	Indicato
	1				-	
	1				-	
	$\pm \pm$					
Percent of Dominant Species that are OE (excluding FAC-) 0/0 = 0.00% Remarks:		Nume	eutral: 0/0 = 0. ric Index: 0/0	= 0.00	1	
No wetland vegetation; site virtually unvegetated. blue grama, and wheatgrass.	Surrounded by s	cattered Xanthium,	big sage, fringed sage, o	ounycup guniwe	ed. prickly po	ear cactus
HYDROLOGY						
YES Recorded Data(Describe in Rema NO Stream, Lake or Tide Gauge YES Aerial Photographs NO Other NO No Recorded Data Field Observations		Primary in YES 1 YES 1 YES 1 NO 1 NO 1	ology Indicators ndicators ndicators nundated saturated in Upper 1: Vater Marks Drift Lines sediment Deposits Oralinage Patterns in y Indicators			
Depth of Surface Water:	= 48 (in.)	_NO (y indicators Oxidized Root Chann Vater-Stained Leave		12 Inches	
Depth to Free Water in Pit: Depth to Saturated Soil:	N/A (in.) N/A (in.)	NO F	ocal Soil Survey Date AC-Neutral Test Other(Explain in Rem			
Remarks:		1.00	America plant in Neti	41.49)		
Impoundment inundated, perimeter saturated. Sn	nall, rectangular p	oond just above dike				

Page 1 of 2 WelFormⁱⁿ



DATA FORM ROUTINE WETLAND DETERMINATION (1987 COE Wetlands Delineation Manual)

Applicant				Project N	o: Task 23	Date: 29-Jul-2002 County: Phillips State: Montana Plot ID: 5				
SOILS										
Map Sym	bol: NA y (Subgrou	es and Phase): Drainage Class: p): Unknown	Unmapped Unknown	Mapped Hydric Inclusion? Field Observations Confirm Mapped Type? Y						
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast	Texture, Co	ncretions, Structure, etc				
10	10 B 10YR4/1 10YR4/6		10YR4/6	Few Faint	Clay					
Remarks Sample alo	YES Gleye	ed or Low Chroma saturated to surface.	Colors	NO Usted on Natio		oils List				
WETLAND	DETERMI	NATION								
Wetland H	ic Vegetatio tydrology Pr ils Present?			Is the Sampling Point v	within the Wet	land? Yes No				
Remarks: Puffin Rese		tland vegetation prese	nt. Site consists of fi	ooded rectangular unvegeta	ted pit. Water e	axtremely furbid. Heavy cattle u				

Page 2 of 2 WetForm**

LAND & WATER B-23

Evaluation Date: Mo. Da	ν30 γr. Ol 4. E	evaluator(s):	B/MT	5 , Wetl	ands/Site	#(s) Fen	gun	1 les.	
Wetland Location(s): i. Legal: ii. Approx. Stationing or Mi	T22 (Nors; R30	(E) w;s 19		;TNo	or S; R	_E or W; S		ERVOT	:
iii. Watershed: 1004	0 04 GPS	Reference No.	if applies): _	NA			<i></i>	EKUDI	
a. Evaluating Agency:		8, Wetland	size: (total ac	cres)		ally estimate		S [if applies])	
Wetlands potentially a Mitigation wetlands; pr Mitigation wetlands; pr Other	re-construction	9. Assessr	nent area: (A tions on deten		1.2	(visuall (measu		ated) g. by GPS [if	applies])
Classification of Wetland ar	nd Aquatic Habitats in	n AA (HGM accor	ding to Brinso	n, first col.; USFV	VS accord	ing to Cowa	rdin [19	79], remainir	ng cols.)
GM Class	System		ystem		Class	Water Re		Modifier	% of A
ep (surf. Water)	Palustrine	_			EM	SF		D	40
11 11	Palustine	_			AB	SPF	,	D	30
h 11	lı.				UB	SPF		D	30
EM/ System: Riverine (R)/ Subsyst.:	tand (SS), Forested Wetland Lower Perennial (2)/ Classes tv Flooded (F), Seasonally Fl	(FO)/ System: Lacus s: RB, UB, AB, US, EM looded (C), Saturated (trine (L)/, Subsys / Subsystem: Up; B), Temporarily Fl	per Perennial (3)/ Clas looded (A), Intermittent	es:RB,UB,A ses:RB,UB, tyFlooded (J	B/ Subsystem AB, US/ Wate Modifiers: E	: Littoral (r Regime	(4)/ Classes: Ri es: Permanently	B, UB, AB, Flooded (H)
EM/ System: Riverine (R)/ Subsyst: Imittently Exposed (G), Semipermanent Partly Drained (PD), Farmed (F), Artifice. Estimated relative abundant	land (SS), Forested Wetland Lower Perennial (2)/ Classes tly Flooded (F), Seasonally Fl iial (A) HGM Classes: River	(FO)/ System: Lacus s: RB, UB, AB, US, EM looded (C), Saturated (rine, Depressional, Sig	trine (LI), Subsys / Subsystem: Up; B), Temporarily Fi pe, Mineral Soil Fi	L: Limnetic (2)/ Classi per Perennial (3)/ Classi looded (A), Intermittent ats, Organic Soil Flats	es: RB, UB, A ses: RB, UB, ty Flooded (J) , Lacustrine F	B/ Subsystem AB, US/ Wate Modifiers: Eximple	: Littoral (r Regime :cavated	(4)/ Classes; Ries; Permanently (E), Impounded	3, UB, AB, Flooded (H)
EM/ System: Riverine (R)/ Subsyst: Inmittently Exposed (G), Semipermanent, Partly Drained (PD), Farmed (F), Artifice. Estimated relative abundan (Circle one) Comments:	land (SS), Forested Wetland Lower Perennial (2)/ Classes thy Flooded (F), Seasonally Fi pial (A) HGM Classes: River ce: (of similarly classif nknown	(FO)/ System: Lacus s: RB, UB, AB, US, EM looded (C), Saturated (rine, Depressional, Sio lied sites within the Rare	ifine (L)/, Subsys (Subsystem: Up; B), Temporarily Fi pe, Mineral Soil Fi e same Major I	t.: Limetic (2)/ Classiver Perennial (3)/ Classocode (A), Internitent ats, Organic Soil Flats Montana Watersh Common	es: RB, UB, A ses: RB, UB, ty Flooded (J) , Lacustrine F	B/ Subsystem AB, US/ Wate Modifiers: Eximple	r Regime ccavated	(4)/ Classes; Ries; Permanently (E), Impounded	3, UB, AB, Flooded (H)
EM/ System: Riverine (R// Subsyst.: Imittently Exposed (G), Semipermanent Partly Drained (PD), Farmed (F), Artific Estimated relative abundan (Circle one) Ur Comments:	land (SS), Forested Wetland Lower Perennial (2)/ Classes tly Flooded (F), Seasonally Fl ial (A) HGM Classes: River ce: (of similarly classif nknown (use matrix below to d	(FO)/ System: Lacus s: RB, UB, AB, US, EM looded (C), Saturated (rine, Depressional, Sio lied sites within the Rare	tifine (L)f, Subsyst Subsystem: Up; B), Temporarily Fi pe, Mineral Soil Fi e same Major I ppropriate res	t.: Limetic (2)/ Classiver Perennial (3)/ Classocode (A), Internitent ats, Organic Soil Flats Montana Watersh Common	es; RB, UB, A ses; RB, UB, ty Flooded (J) , Lacustrine F ed Basin, s	B/ Subsystem AB, US/ Wate Modifiers: Ex innge see definition A	c Littoral (r Regime ccavated ns)	(4)/ Classes; Ries; Permanently (E), Impounded	B, UB, AB, Flooded (H)
EM/ System: Riverine (R// Subsyst: Imittently Exposed (G), Semipermanent Partly Drained (PD), Farmed (F), Artific Estimated relative abundan (Circle one) Ur Comments: General condition of AA: i. Regarding disturbance:	land (SS), Forested Wetland Lower Perennial (2)/ Classes tly Flooded (F), Seasonally Fl ial (A) HGM Classes: River ce: (of similarly classif nknown (use matrix below to d	(FO)/ System: Lacus ERB, UB, AB, US, EM Looded (C), Saturated (rine, Depressional, Sto Ted sites within the Rare Letermine [circle] a Land managed in p natural state; is not logged, or otherwise	Affine (L)f, Subsyst Subsystem: Up; B), Temporarily Fi pe, Mineral Soil Fi e same Major I ppropriate res Predomiantly grazed, hayed, e converted,	t.: Limetic (2)/ Classiver Perennial (3)/ Classor Perennial (3)/ Cla	es; RB, UB, A ses; RB, UB, A ty Flooded (J) ty Flooded (J) to Caustrine F ed Basin, s flocent to (but moderate selectively log to minor clea	B/ Subsystem AB, US/ Wate AB, US/ Wate Modifiers: Eximple See definition A within 500 fr light Land of glight subject ring: clearing clearing	cultivated to substitute to su	(4)/ Classes: Ri s: Permanently (E). Impounded nt AA or heavily graze tantial fill placet (rological alterations)	a, UB, AB, Flooded (H) (I). Diked or logged nent, gradin;
EM/ System: Riverine (R// Subsyst: Imittently Exposed (G), Semipermanent Partly Drained (PD), Farmed (F), Artifice Estimated relative abundan (Circle one) Ur Comments: General condition of AA: 1. Regarding disturbance: Conditions within coccurs and is managed in predominant and, hayed, logged, or otherwise converse.	land (SS), Forested Wetland Lower Perennial (2)/ Classes thy Flooded (F), Seasonally Fl iial (A) HGM Classes: River ce: (of similarly classifi inknown (use matrix below to descript the content of the	(FO)/ System: Lacus is: RB, UB, AB, US, EM looded (C), Saturated (rine, Depressional, Sto lied sites within the Rare letermine [circle] a Land managed in p natural state; is not	ifine (L)/, Subsyst Subsystem: Up; B), Temporarily Fi pe, Mineral Soil Fi e same Major I ppropriate res Predomia redominantly grazed, hayed, a converted; ads or buildings.	tt: Limetic (2)/ Classiver Perennial (3)/ Classor Perennial (3)/ Classor Coded (A), Intermittent ats, Organic Soil Flats Montana Watersh Common ponse) pant conditions accurate and not cultivated, grazed or hayed or s	es; RB, UB, A ses: RB, UB, y Flooded (J) y Lacustrine F ed Basin, s fjacent to (but moderate se'ectively log to minor clea or buildings.	B/ Subsystem AB, US/ Wate AB, US/ Wate Modifiers: Eximple see definition A within 500 fr uithin 500 fr	r Regime (cavated) as bundar bundar (cautivated to subsiger or bydding density and cautivated to subsiger or bydding to subsiger or byd	(4)/ Classes: Ri s: Permanently (E). Impounded nt AA or heavily graze tantial fill placet (rological alterations)	a, UB, AB, Flooded (H) (I). Diked or logged nent, gradin;
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EM/ System: Riverine (R)/ Subsyst: Immittently Exposed (G), Semipermanent, Partly Drained (PD), Farmed (F), Artifice . Estimated relative abundant (Circle one) Ur Comments: 2. General condition of AA: 1. Regarding disturbance: Conditions within a cocurs and is managed in predominant ared, hayed, logged, or otherwise converted or occupied buildings. 1. not cultivated, but moderately grazed or ged; or has been subject to relatively miscement, or hydrological alteration; contact cultivated or heavily grazed or logged; to batantial filt placement, grading, clearing throad or building density.	tand (SS), Forested Wetland Lower Perennial (2)/ Classes thy Flooded (F), Seasonally Fi itial (A) HGM Classes: River ce: (of similarly classif inknown (use matrix below to d 7 AA thy natural state; is not thed; does not contain or hayed or selectively interested for selectively insisted to relatively g, or hydrological alteration; thance, intensity, season we summary of AA and the summary of	(FO)/ System: Lacus ERB, UB, AB, US, EM looded (C), Saturated (rine, Depressional, Sio fied sites within the Rare etermine [circle] a Land managed in p natural state; is not logged, or otherwise does not contain roo low disturbance moderate distur high disturbance on, etc.): Healt es (including the	inne (L)/, Subsystem: Up; Subsystem: Up; B), Temporarily Fi pe, Mineral Soil Fi pe same Major I perconning redominantly grazed, hayed, a converted, adds or buildings. The perconning redominantly grazed by the perconning r	te timetic (2)/ Classiver Perennial (3)/ Classor Perennial (3)/ Common Ponse) Dental Conditions and Common Ponse Perennial Conditions and Common Ponse Perennial (3)/ Classor Perennia	ss: RB, UB, Asses: RB, UB, Value of the control of	B/ Subsystem AB, US/ Wate AB, U	r Regime cavated ons) bundar eet of) / cultivated to subsig, or hydding denserate disturb disturb	(A) Classes; Ries: Permanently (E), Impounded AA or heavily graze tantial fill placer trological alteratisity. sturbance ance	a, UB, AB, Flooded (H) (I). Diked or logged nent, gradin
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SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

Pen

 Habitat for Federal! AA is Documented (I Primary or critical hat Secondary habitat (Iis Incidental habitat (Iis No usable habitat 	o) or Su pitat (Ils st speci	specter t speci les)	d (S) to	cont	reatene ain (circ D S D S D S D S	d or E	phased o	ered on de	Plants efinition:	or Ani	mals: ined in i	instr	uctions)	:						
 Rating (use the concluthis function) 	usions fr	rom i al	bove and	d the	matrix	below	to arrive	at [c	circle] th	e func	tional po	oints	and rati	ng [H	= high, l	M = 1	noderat	e, or L	= low] f	or
Highest Habitat Level		doc./p	rimary		sus/prir	nary	doc./	seco	ondary	sus	./second	dary	doc	./incide	ental	sus	/incider	ntal	None	ė
Functional Points and Ri	atina	1 (H)			.9 (H)		.8 (N	13		.7 (M)		.5 (1)	(.3 (1			0 (L)	
Sources for documented u		Market Company of the State of	vations.	_):	1.0			1			1.01			£	1		1 - 1-7	
AA is Documented (I Primary or critical hat Secondary habitat (Ilis Incidental habitat (Ilis No usable habitat Rating (use the concluths function)	oitat (lis st speci t specie	t speci les) is)	les)			<i></i>	20K-1	1/1	uel 3	29) 1:14	Fra	nt.	lins	7n1	_	M = 1	moderat	e, or L	= low] f	or
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Highest Habitat Level	. (rimary	1		i idi y			Unida y			July			J.	-		- LOI		
Functional Points and Re Sources for documented u			ntions .		.8 (H)	Y /	.7 (N		15 0	0.6 (M) .		.2(001		.1 (-)		0 (L)	_
14C. General Wildlife Ha I. Evidence of overall will Substantial (based on an observations of abundant wildlife sign presence of extremel interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adequate adjacent up interviews with local to the common occurrence adjacent up interviews with local to the common occurrence adjacent up interviews with local to the common occurrence adjacent up interviews with local to the common occurrence adjacent up interviews with local to the common occurrence adjacent up interviews with local to the common occurrence ad	lidite unity of the dant wilder such a y limiting biologist of the for ered wilder of wildir oland for piologist	following the second se	ng [checks or high tracks, at featur knowled; g [check oups or such as res knowled;	ck]): spe nest es n ge of]): indiv s sca	cies divi structu of availa f the AA riduals o at, tracks	versity or relations, nest	(during a ame trail the sum the sum ively few structur	s, et ound spe res,	period) ic. ding are scies du game tr	a ning pe ails, etc	Low (fev littl sp into	(base w or le to arse ervie	ed on ar no wildl no wildl adjacer ws with	ny of th ife obs ife sign nt uplan local t	ervation n nd food piologist	s du sour s wit	h knowl	ak use p	f the AA	
II. Wildlife habitat feature (L) rating. Structural dive of their percent composition seasonal/intermittent; T/E	rsity is f	rom #1 AA (se	3. For 6 e #10).	class	cover to	to be co	onsidere surface	ed ev	venly dis er durat	tribute ions an	d, veget e æs foll	ated ows:	classes P/P = p	s must permar	be with nent/per	in 20)% of ea	ch oth	M), or lo er in ten	ms
Structural diversity (see				Hi							Q	Mod	erate					Lov	v	
#13) Class cover distribution		Eve	n			Unev	ven.	-	-	Eve	2			Unev	ven			Eve	n	
(all vegetated classes)						-1101				-										
Duration of surface	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I)	T/E	Α	P/P	S/I	T/E	A	P/P	S/I	T/E	1
water in ≥ 10% of AA	-	-	-	,	-	-			-	H	н	-	E	н	м	м	E	н	м	١,
Low disturbance at AA (see #12i)	E	E	E	н	E	E	н	н	E	н	н	М	_	"	, m	m	-		IVI	
Moderate disturbance	н	н	Н	н	н	Н	н	М	н	н	М	м	н	М	М	L	Н	М	L	I
at AA (see #12i)	L							I.			L	1.		-		١.	-		,	+.
High disturbance at AA	l M	M	M	ı L!	M	M	i L	ı Li	ı M	L/ M		1 6	141			1 6				1 6

III. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L = low] for this function)

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

comments: Many Leopard tross, patited turks

(see #12i)

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14D. General Fish/Aquatic 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 precipted by perched culvert or other barrier, etc.]. If the AA is not or was not historically used by fish due to lack of habitat, excessive gradient, etc., circle NA here and proceed to the next function. If fish use occurs in the AA but is not desired from a resource management perspective [such as fish use within an imigation canal], then Habitat Quality [i below] should be marked as "Low", applied accordingly in ii below, and noted in

. Habitat Quality (circle appropriate AA attributes in matrix to arrive at exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of surface water in AA	Perm	anent / Pere	ennial	Seas	onal / Intern	nittent	Tem	porary / Ephe	emeral
Cover - % of waterbody in AA containing cover objects such as submerged logs, large rocks & boulders, overhanging banks, floating-leaved vegetation, etc.	>25%	10–25%	<10%	>25%	10-25%	<10%	>25%	10–25%	<10%
Shading - >75% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	E	Ē	н	H.	н	М	М	М	М
Shading – 50 to 75% of streambank or shoreline within AA contains rip. or wetland scrub-shrub or forested communities	н	н	М	М	M	М	М	L	L
Shading - < 50% of streambank or shoreline within AA contains rip. or wetland scrub-shrub or forested communities	н	М	М	М	L	L	L	L	L

ii. Modified Habitat Quality (Circle the appropriate response to the following question. If answer is Y, then reduce rating in I above by one level [E = H, H = M, M = L, L = L]). Is fish use of the AA precluded or significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support?

Y

N

Modified habitat quality rating = (circle)

E

M

L

III. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L = low) for this function)

Types of fish known or suspected within AA	Modified Habitet Quality (ii)									
suspected within AA	Exceptional	High	Moderate	Low						
Native game fish	1 (E)	.9 (H)	.7 (M)	.5 (M)						
Introduced game fish	.9 (H)	.8 (H)	.6 (M)	.4 (M)						
Non-game fish	.7 (M)	.6 (M)	.5 (M)	.3 (L)						
No fish	.5 (M)	.3 (L)	.2 (L)	.1 (L)						

Comments:

the comments.)

14E, Flood Attenuation: (applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle NA here and proceed to next function.)

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

function)										
Estimated wetland area in AA subject to periodic flooding		≥ 10 acres			<10, >2 acre	5	< <	≤2 acres		
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	ı
AA contains no outlet or restricted outlet	1(H)	.9(H)	.6(M)	.8(H)	.7(H)	.5(M)	.4(M)	.3(L)	.2(L))	
AA contains unrestricted outlet	.9(H)	.8(H)	.5(M)	.7(H)	.6(M)	.4(M)	.3(L)	.2(L)	-11(C)	

II. Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA (circle)? Y 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, circle NA here and proceed with the evaluation.)

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. 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	1	>5 acre feet <5, >1 acre feet ≤1 acre								
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	SID	T/E	P/P	S/I	T/E	
Wetlands in AA flood or pond ≥ 5 out of 10 years	1(H)	.9(H)	.8(H)	.8(H)	C.6(M)	.5(M)	.4(M)	.3(L)	.2(L)	
Wetlands in AA flood or pond < 5 out of 10 years	.9(H)	.8(H)	.7(M)	.7(M)	.5(M)	.4(M)	.3(L)	.2(L)	.1(L)	

Comments:

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive excess 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, circle NA here and proceed with the evaluation.)

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

Sediment, nutrient, and toxicant input levels within AA	deliver low or comp substantial	to moderate le counds such the y impaired. Mit ts or toxicants,	evels of sedime hat other functi	ons are not ion, sources of	nutrients, or co	r "probable caus cants or AA rece ntial to deliver hig impounds such paired. Major se	es" related to eives or surrou gh levels of se that other fund dimentation, s	sediment, unding land diments, ctions are sources of
% cover of wetland vegetation in AA	>	70%	<	70%	≥70			0%
Evidence of flooding or ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains no or restricted outlet	1 (H)	.8 (H)	.7 (M)	.5 (M)	(.5 (M))	.4 (M)	.3 (L)	.2 (L)
AA contains unrestricted outlet	9 (H)	.7 (M)	.6 (M)	.4 (M)	.4 (M)	.3 (L)	.2 (L)	.1 (L)

Pen

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 does not apply, circle NA here and proceed to next function)

Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L = low) for this function.

% Cover of wetland streambank or	Duration of surface water adjacent to rooted vegetation									
shoreline by species with deep, binding rootmasses	permanent / perennial	seasonal / intermittent	Temporary / ephemeral							
≥ 65%	1 (H)	.9 (H)	.7 (M)							
2 65% 35-64% < 35%	.7 (M)	(M) a.	.5 (M)							
< 35%	.3 (L)	.2 (L)	.1 (L)							

14I. Production Export/Food Chain Support:

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. Factor A = acreage of vegetated component in the AA; Factor B = structural diversity rating from #13; 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 = permanent/perennial; S/I = seasonal/intermittent;

T/E /A= temporary/ephemeral or absent (see instructions for further definitions of these terms).)

Α		Vegeta	ited comp	ponent >	5 acres		(Vegeta	ted comp	conent 1	5 acres			Vegeta	sted com	ponent «	1 acre	
В	Hi	gh	Mod	erate	L	ow	Н	igh	I Moo	erate		ŚW	Hi	gh	Mod	erate	Lo	w
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.9H	.9H	.8H	.8H	.7M	.9H	.8H	.8H	.7M	.7M	.6M	.7M	.6M	.6M	.4M	.4M	.3L
S/I	.9H	.8H	.8H	.7M	.7M	.6M	.8H	.7M	(.7M)	.6M	.6M	.5M	.6M	.5M	.5M	.3L	.3L	.2L
T/E/	.8H	.7M	.7M	.6M	.6M	.5M	.7M	.6M	.6M	.5M	.5M	.4M	.5M	.4M	.4M	.2L	.2L	.1L
A																		

Comments:

14J, Groundwater Discharge/Recharge: (Check the indicators in i &	below that apply to the AA)
I. Discharge Indicators	ii. Recharge Indicators
Springs are known or observedVegetation growing during dormant season/droughtWetland occurs at the toe of a natural slopeSeeps are present at the wetland edgeAA permanently flooded during drought periodsWetland contains an outlet, but no inlet	Permeable substrate present without underlying impeding layerWetland contains inlet but no outletOther
Other	
III. Rating: Use the information from i and ii above and the table below	c arrive at [circle] the functional points and rating [H = high, L = low] for this function.
Criteria	Functional Points and Rating
AA is known Discharge/Recharge area or one or more indicators of D/R	present 1(H)
No Discharge/Recharge indicators present	(.1 (L))
Available Discharge/Recharge information inadequate to rate AA D/R po	ential N/A (Unknown)

Comments:

14K. Uniqueness:

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

Replacement potential	mature (>80 y	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MNHP			and structu	ains plant	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	by the MNHP abundant	rare	common	abundant		
Low disturbance at AA (#12i)	1 (H)	.9 (H)	.8 (H)	.8 (H)	.6 (M)	.5 (M)	.5 (M)	.4 (M)	.3 (L)		
Moderate disturbance at AA (#12i)	.9 (H)	.8 (H)	.7 (M)	.7 (M)	.5 (M)	.4 (M)	.4 (M)	.3 (L)	.2 (L)		
High disturbance at AA (#12i)	.8 (H)	.7 (M)	.6 (M)	.6 (M)	.4 (M)	.3 (L)	.3 (L)	(2(L))	.1 (L)		

Comments:

14L. Recreation/Education Potential: i. Is the AA a known rec./ed. site: (circle) N. N. of yes, rate as [circle] High [1] and go to ii; if no go to iii)

ii. Check categories that apply to the AA: ___Educational/scientific study; ___Consumptive rec.; ___Non-consumptive rec.;

(If yes, go to ii, then proceed to iv, if no, then rate as [circle] Low [0.1])

V. Rating (use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Ownership		Disturbance at AA (#12i)	
	low	moderate	high
public ownership	1 (H)	.5 (M)	.2 (L)
private ownership	.7 (M)	.3 (L)	(f(L))

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FUNCTION & VALUE SUMMARY & OVERALL RATING

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Function & Value Variables	Rating	Actual Functional Points	Possible Function al Points	Functional Units; (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	VOW	0.3	1	
B. MT Natural Heritage Program Species Habitat	H16H	1.0	1	
C. General Wildlife Habitat	HIGH	0.8	1	
D. General Fish/Aquatic Habitat	NA			
E. Flood Attenuation	LOW	0.2	1	
F. Short and Long Term Surface Water Storage	MOD	0.60	1	
G. Sediment/Nutrient/Toxicant Removal	MOD	0.5	1	
H. Sediment/Shoreline Stabilization	MOD	0.6	1	
I. Production Export/Food Chain Support	MOD.	0.7	1	
J. Groundwater Discharge/Recharge	LOW	0.1	1	
K. Uniqueness	Low	0.2	1	
L. Recreation/Education Potential	LOW	0,1	1	
Totals:		5.1.	[]]	

OVERALL ANALYSIS AREA (AA) RATING: (Circle appropriate category based on the criteria outlined below)

	1		
(II		Ш	

IV

Category I Wetland: (Must satisfy one of the following criteria; if does not meet criteria, 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 Total actual functional points > 80% (round to nearest whole #) of total possible functional points. Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; if not satisfied, go to Category IV) Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish/Aquatic 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 Total Actual Functional Points > 65% (round to nearest whole #) of total possible functional points. Category III Wetland: (Criteria for Categories I, II or IV not satisfied) Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; if does not satisfy criteria go to Category III) "Low" rating for Uniqueness; and "Low" rating for Production Export/Food Chain Support; and Total actual functional points < 30% (round to nearest whole #) of total possible functional points

Project Name: Fourche							wit &	eser do.
7	29 02	~ (35)					
. Wetland Location(s): I. Legal II. Approx. Stationing or M	: T22 (N) r S; R2 Illeposts:	(E & W; S	29	;TN	or S; R	_	SERVOI	;
iii. Watershed: \(\int O \) Other Location Informatio	0104 GPS	S Reference	No. (if applies): _	NA			XXVII	
b. Purpose of Evaluation: 1Wetlands potentially a control wetlands; p a Mitigation wetlands; p 4Other	affected by MDT projectore-construction	t 9. As:	otland size: (total a sessment area: (A nstructions on deter	/, L/_ A, tot., ac.,		ally estimated) sured, e.g. by GP (visually estin (measured, e	nated)	
10. Classification of Wetland a	nd Aquatic Habitats i	n AA (HGM	according to Brinso	n, first col.; USFV	NS accordin	g to Cowardin [1	979], remaini	ng cols.)
HGM Class	System		Subsystem		Class	Water Regime	Modifier	% of A
Dep (surf. Water)	Palustrine		_		EM	SF	D.	40
11 11	Palustone		_		AB	SPF	D	50
n n	11		_		UB	SPF	D	10
								,
Estimated relative abundan (Circle one) U Comments:	ce: (of similarly classifi nknown	ied sites with Rare		Montana Watersh Common	ed Basin, se	e definitions) Abunda	nt	
2. General condition of AA:						177		
Regarding disturbance: Conditions within		etermine [cir	cle] appropriate res Predomi	ponse) nant conditions ac	fiacent to (w	ithin 500 feet of)	AA	
		natural state; logged, or oth	ed in predominantly is not grazed, hayed, nerwise converted; tain roads or buildings.	Land not cultivated, grazed or hayed or s or has been subject contains few roads	but moderately selectively logg- to minor clears	Land cultivated ed, subject to sub-	f or heavily graze stantial fill placers frological alterati	nent, grading
occurs and is managed in predominant ized, hayed, logged, or otherwise conve		low disturt		low disturbance		moderate d		
eds or occupied buildings not cultivated, but moderately grazed o gged; or has been subject to relatively m		moderate o	disturcance	moderate distur	bance	high disturb	ance	,
icement, or hydrological atteration; control cultivated or heavity grazed or logged; bstanbal fill placement, grading, clearing	subject to relatively	high distur	bance	high disturbanc	9	high disturb	ance	
Comments: (types of disturii. Prominent weedy, alien	ve summary of AA an					ARV Surrounde	d by	
3. Structural Diversity: (based	on number of "Coward	lin" vegetate	ed classes present	do not include un	vegetated cl	asses), see #10	above)	
# of "Cowardin" vegetated class				ed classes (or		d classes (or	≤ 1 vegetate	d class
Rating (circle)			High		Moderate		Low	
Comments:								



Fla

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

AA is Documented (Di Primary or critical habi Secondary habitat (IIst Incidental habitat (IIst No usable habitat) or Sus itat (list t speci	spected speci es)	d (S) to	cont	ain (circ	e one	plased of	n de	efinitions of over	conta	ined in i	nstru	uctions)	:	=					
I. Rating (use the conclustrist function)	sions fr	om i at	oove and	the	matrix	below t	o arrive	at [c	ircle) th	e funct	tional po	ints	and rati	ng (H =	high, M	Λ = r	noderati	e, or L	= low] f	or
Highest Habitat Level		doc./p	rimary	1	sus/prin	nary	doc./	seco	ondary	sus	/second	lary	doc	/incide	ental	sus,	/inciden	ital	None	e
Functional Points and Ra	ting	1 (H)			.9 (H)		.8 (M	1)		.7 (1	M)		.5 (_)		3 (L			0 (L)	
Sources for documented us	se (e.g.	observ	rations,	reco	rds, etc):														
AA is Documented (D Primary or critical hab Secondary habitat (list Incidental habitat (list No usable habitat	itat (list t speci specie	t speci es) s)	les)	Ų	s s s s s s	<i>510</i>	ock-n	rck	yd s	1117	per	eg	me.	fall		M = r	moderat	e, or L	= low] f	for
Highest Habitat Level		d0С/р	qmary		sus/prir	mary	doc./	seco	ondary	sus	./second	dary	doc	./incide	ental	sus.	/incider	ntal	Non	e
Functional Points and Ra Sources for documented us	ting \	1 (H))	1	.8 (H)		.7 (N	1)		.6(M) _		.2(L)	1	.1 (L	-)		0 (L)	
Substantial (based on any observations of abundant wildlife sign presence of extremely interviews with local bit Moderate (based on any observations of scatte common occurrence of adequate adjacent upil	y of the lant wild such a limiting iologists of the for red wild of wildlift land foo	following the state of the stat	ng [check s or high tracks, at featur knowled [check oups or such as rees	ck]): spe nest es n ge o]): indiv	cies divi t structu ot availa f the AA iduals o	ersity (ires, ga able in t a or relati s, nest	(during a ame trail the surre	any p s, et ound	period) c. ling area	ing pe	Low (fev littl sp: inte	base v or i e to arse arvie	ed on ar no wildli no wildl adjacer	ny of the fe obse ife sign nt uplan	ervations and foods	sour	check]): ring pea ces h knowle	k use p		
interviews with local bi ii. Wildlife habitat feature (L) rating. Structural diver- of their percent compositions seasonal/intermittent; T/E =	s (work sity is fo	ting fro rom #1 AA (se	m top to 3. For o	bot	tom, circ cover to breviation	cle app to be co	onsidere surface	ed ev	enly dis er durat	tribute ions an	d, veget e as folk definitie	ated ows:	classes P/P = p	must erman	be withi ent/per	n 20	% of ea	ch othe	er in ter	ms
Structural diversity (see				Hi	gh						U	ylook	erate)					Lov	٧	
#13) Class cover distribution		Eve	n			Unev	en			Eve	9			Unev	en			Eve	n	
(all vegetated classes) Duration of surface	P/P	S/I	T/E	Α	P/P	\$/I	T/E	A	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	A
water in ≥ 10% of AA																				
Low disturbance at AA (see #12i)	E	Ε	E	н	E	E	н	н	E	н	н	M	E	Н	М	М	E	н	М	М
Moderate disturbance at AA (see #12i)	н	н	Н	н	Н	н	н	М	н	н	М	М	Н	М	М	L	н	М	L	L

III. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M =

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

comments: 1000's of Leopard Frogs present in 2001.

High disturbance at AA

14D. General Fish/Aquatic 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 or was not historically used by fish due to lack of habitat, excessive gradient, etc., circle NA here and proceed to the next function. If fish use occurs in the AA but is not desired from a resource management perspective [such as fish use within an irrigation canal], then Habitat Quality [i below] should be marked as "Low", applied accordingly in ii below, and noted in the comments.)

Habitat Quality (circle appropriate AA attributes in matrix to arrive at exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of surface water in AA	Perm	nament / Pere			onal / Intern			porary / Ephe	
Cover - % of waterbody in AA containing cover objects such as submerged logs, large rocks & boulders, overhanging banks, floating-leaved vegetation, etc.	>25%	10–25%	<10%	(25%)	10-25%	<10%	>25%	10–25%	<10%
Shading - >75% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	E	E	н	Н	Н	М	М	М	М
Shading – 50 to 75% of streambank or shoreline within AA contains rip. or wetland scrub-shrub or forested communities	н	н	М	М	М	М	М	L	L
Shading - < 50% of streambank or shoreline within AA contains rip. or wetland scrub-shrub or forested communities	Н	М	М	\odot	L	L	L	L	L

ii. Modified Habitat Quality (Circle the appropriate response to the following question. If answer is Y, then reduce rating in i above by one level [E = H, H = M, M = L, L = L]). Is fish use of the AA precluded or significantly reduced by a culvert, dike, or other men-made structure or activity or is the waterbody included on the MDEQ list of vaterbodies in need of TMDL development with listed "Probable Impaired Uses including cold or warm water fishery or aquatic life support?

Y

Modified habitat quality rating = (circle)

E

H

M

L

III. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M =

moderate, or L = low] for this function)

Types of fish known or		Modified Habitat Quality (ii)							
suspected within AA	Exceptional	High	(Moderate)	Low					
Native game fish	1 (E)	.9 (H)	.7 (M)	.5 (M)					
Introduced game fish	.9 (H)	.8 (H)	6 (M)	.4 (M)					
(Non-game fish)	.7 (M)	.6 (M)	(.5(M))	.3 (L)					
No fish	.5 (M)	.3 (L)	3(4)	.1 (L)					

comments: None obs., but MOT says fish were observed (Urban).

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, circle NA here and proceed to next function.)

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Turiotion/									
Estimated wetland area in AA subject to periodic flooding	≥ 10 acres			<10, >2 acres				, _	
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	C25%
AA contains no outlet or restricted outlet	1(H)	.9(H)	.6(M)	.8(H)	.7(H)	.5(M)	.4(M)	.3(L)	(2(1))
AA contains unrestricted outlet	.9(H)	.8(H)	.5(M)	.7(H)	.6(M)	.4(M)	.3(L)	.2(L)	.1(L)

ii. Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA (circle)? 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, circle NA here and proceed with the evaluation.)

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. 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 1)

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			<5, >1 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	SD	T/E	P/P	S/I	T/E	
Wetlands in AA flood or pond ≥ 5 out of 10 years	1(H)	.9(H)	.8(H)	.8(H)	C.6(MD	.5(M)	.4(M)	.3(L)	.2(L)	
Wetlands in AA flood or pond < 5 out of 10 years	.9(H)	.8(H)	.7(M)	.7(M)	.5(M)	.4(M)	.3(L)	.2(L)	1.1(L)	

Comments:

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive excess 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, circle NA here and proceed with the evaluation.)

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Sediment, nutrient, and toxicant input levels within AA	deliver low or comp substantially	to moderate le ounds such th y impaired. Min s or toxicants,	ing land use wi wels of sedime hat other function nor sedimentat or signs of eut esent.	nts, nutrients, ons are not ion, sources of	Waterbody on MI development for nutrients, or toxic use with poten nutrients, or co substantially imp nutrients or toxic	*probable caus ants or AA rece tial to deliver hig mpounds such paired. Major se	es" related to eives or surrou gh levels of se that other funk edimentation, s	sediment, unding land diments, ations are sources of
% cover of wetland vegetation in AA	> 70% < 70%			≥ 70°	%)	< 7	0%	
Evidence of flooding or ponding in AA	Yes	No	Yes	No	(XES)	No	Yes	No
AA contains no or restricted outlet	1 (H)	.8 (H)	.7 (M)	.5 (M)	(5(M)	.4 (M)	.3 (L)	.2 (L)
AA contains unrestricted outlet	.9 (H)	.7 (M)	.6 (M)	.4 (M)	.4 (M)	.3 (L)	.2 (L)	.1 (L)

Flo

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 does not apply, circle NA here and proceed to next function)

Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L

% Cover of wetland streambank or	Duratio	n of surface water adjacent to rooted ve	getation
shoreline by species with deep, binding rootmasses	permanent / perennial	seasonal / intermittent	Temporary / ephemeral
≥ 65%	1 (H)	.9 (H)	.7 (M)
35-64%	.7 (M)	(M))	.5 (M)
< 35%	.3 (L)	.2 (L)	.1 (L)

Comments:

14I. Production Export/Food Chain Support:

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. Factor A = acreage of vegetated component in the AA; Factor B = structural diversity rating from #13; 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 = permanent/perennial; S/I = seasonal/intermittent; T/E /A= temporary/ephemeral or absent [see instructions for further definitions of these terms].

A	terripos		ted comp		5 acres		(Vegetated component 1-5 acres)				Vegetated component <1 acre							
B	Hi	ah	Mode			ow	Hi	igh	QMm)	erate	Lo	w	Hi	gh	Mode	erate	Lo	w
C	Yes	No	Yes	No	Yes	No	Yes	No	(Yes)	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.9H	.9H	.8H	.8H	.7M	.9H	.8H	.8H	.7M	.7M	.6M	.7M	.6M	.6M	.4M	.4M	.3L
S/I	.9H	.8H	.8H	.7M	.7M	.6M	.8H	.7M	C.7M	.6M	.6M	.5M	.6M	.5M	.5M	.3L	.3L	.2L
T/E/	.8H	.7M	.7M	.6M	.6M	.5M	.7M	.6M	.6M	.5M	.5M	.4M	.5M	.4M	.4M	.2L	.2L	.1L
A																		

14J, Groundwater Discharge/Recharge: (Check the indicators in i & ii below that apply to the AA)

Comments:

I. Discharge Indicators Springs 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 Other III. Rating: Use the information from i and ii above and the table below. Criteria	ii. Recharge Indicators Permeable substrate present without underlying impeding layer Wetland contains inlet but no outlet Other vio arrive at [circle] the functional points and rating [H = high, L = low] for this function. Functional Points and Rating
AA is known Discharge/Recharge area or one or more indicators of D/F	R present 1 (H)

Criteria	. Direction, onto and the
AA is known Discharge/Recharge area or one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	(.1 (L))
Available Discharge/Recharge information inadequate to rate AA D/R potential	N/A (Unknown)

Comments:

14K. Uniqueness:

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Replacement potential	mature (>80 y	en, bog, warm r-old) forested tion listed as " MNHP	wetland or	AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MNHP			cited ra and str	does not contain previously d rare types or associations I structural diversity (#13) is low-moderate			
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant		
Low disturbance at AA (#12i)	1 (H)	.9 (H)	.8 (H)	.8 (H)	.6 (M)	.5 (M)	.5 (M)	.4 (M)	.3 (L)		
Moderate disturbance at AA (#12i)	.9 (H)	.8 (H)	.7 (M)	.7 (M)	.5 (M)	.4 (M)	.4 (M)	3(1)	.2 (L)		
High disturbance at AA (#12i)	.8 (H)	.7 (M)	.6 (M)	.6 (M)	.4 (M)	.3 (L)	.3 (L)	297	.1 (L)		

Comments:

14L. Recreation/Education Potential: i. Is the AA a known rec./ed. site: (circle) Y N / yes, rate as [circle] High [1] and go to ii; if no go to iii)

ii. Check categories that apply to the AA: ___Educational/scientific study; ___Consumptive rec.; ___Non-consumptive rec.; ___Other

iii. Based on the location, diversity, size, and other site attributes, is there strong potential for rec./ed. use? Y (N (If yes, go to ii, then proceed to iv, if no, then rate as [circle] Low [0.1])

v. Rating (use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Ownership (use the matrix belo	w to arrive at [circle] the functional points	to arrive at [circle] the functional points and rating [H = nigh, M = hickerate, or L = low] for this forecast. Disturbance at AA (#12i)						
	low	moderate	high					
public ownership	1 (H)	.5 (M)	34)					
private ownership	.7 (M)	.3 (L)	(.1 (L))					

LAND & WATER B-32

FUNCTION & VALUE SUMMARY & OVERALL RATING

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Function & Value Variables	Rating	Actual Functional Points	Possible Function al Points	Functional Units; (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	LOW	0.3	1	
B. MT Natural Heritage Program Species Habitat	HIGH	1.0	1	
C. General Wildlife Habitat	High	0.8	1	
D. General Fish/Aquatic Habitat	MOD	0.5	1	, .
E. Flood Attenuation	Low	0,2	1	
F. Short and Long Term Surface Water Storage	MOD	0.6	1	
G. Sediment/Nutrient/Toxicant Removal	MOD	0,5	1	
H. Sediment/Shoreline Stabilization	MOD	0.6	1	
I. Production Export/Food Chain Support	MOD	0.7	1	
J. Groundwater Discharge/Recharge	LOW	0.1	1	
K. Uniqueness	LOW	0.2	1	
L. Recreation/Education Potential	LOW	0.1	1	
Totals:		5.6	12	

UT %

OVERALL ANALYSIS AREA (AA) RATING: (Circle appropriate category based on the criteria outlined below)

	1	
(11	Ì	Ш

IV

Category I Wetland: (Must satisfy one of the following criteria; if does not meet criteria, 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 Total actual functional points > 80% (round to nearest whole #) of total possible functional points.	
Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; if not satisfied, go to Category IV) Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish/Aquatic 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 Total Actual Functional Points > 65% (round to nearest whole #) of total possible functional points.	
Category III Wetland: (Criteria for Categories I, II or IV not satisfied)	
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; if does not satisfy criteria go to Category III) "Low" rating for Uniqueness; and "Low" rating for Production Export/Food Chain Support; and Total actual functional points < 30% (round to nearest whole #) of total possible functional points	

LAND & WATER B-33

L'aidation De	ate: Mo. 8 Da	30 yr 01 41	Evaluator(s):	56/M7	5 . Wet	lands/Site #	(s) Pintar	1 Lesa	Wolf
Wetland Loca	ition(s): I. Legal: Stationing or Mi	T22 Nar S; R30	E W.S.	19	;TN	or S; R			;
					.//		RE	SERVOI	R_
	ned: 1004 ution Information		S Reference	No. (if applies): _	NH				
b. Purpose of 1Wetl	ation wetlands; progation wetlands; p	ffected by MDT project e-construction	9. Ass	tland size: (total a sessment area: (A structions on deter	_ < A, tot., ac.,		illy estimated) sured, e.g. by GP (visually estin (measured, e	nated)	
. Classification	on of Wetland an	nd Aquatic Habitats I	n AA (HGM a	according to Brinso	on, first col.; USF	NS accordin	g to Cowardin [1	979], remaini	ng cols.)
IGM Class	8	System	5	Subsystem		Class	Water Regime	Modifier	% of A
P.D (51	ust. Water)	Palustrine		-		EM	SF	D.	10
11	11	Palustine		_		UB	SF	Ď	90
						-			-
						-			-
A character and the second					bear and the same of the same				THE RESERVE THE PERSON NAMED IN
	D), Farmed (F), Artifici	ly Flooded (F), Seasonally F ial (A) HGM Classes: Rive	s: RB, UB, AB, US looded (C), Salur	S, E.M. Subsystem: Upp rated (B), Temporatily Fi	st.: Limnetic (2)/ Class per Perennial (3)/ Clas looded (A), Intermitten	es: RB, UB, AB sses: RB, UB, A tly Flooded (J)	B, US/ Water Regim Modifiers: Excavated	(4)/ Classes; Ri es: Permanently	B, UB, AB, Flooded (H).
	D), Farmed (F), Artifici elative abundanc Un	ly Flooded (F), Seasonally F	s: RB, UB, AB, US looded (C), Salur rine, Depressiona	S, EM/ Subsystem: Upi rated (B), Temporarily Fi al, Slope, M.neral Soll Fi	pt: Limnetic (2)/ Class per Perennial (3)/ Class looded (A), Intermitten lats, Organic Soil Flats	es: RB, UB, AB sses: RB, UB, A tly Flooded (J) s, Lacustrine Fri	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge	(4)/ Classes: Ri es: Permanently I (E), Impounded	B, UB, AB, Flooded (H).
. Estimated re (Circle one) Comments	D). Farmed (F), Artifici elative abundance Un s:	ly Flooded (F), Seasonally F lat (A) HGM Classes: Rive ce: (of similarly classif iknown	s: RB, UB, AB, US looded (C), Saturi dine, Depressional fied sites within Rare	S, EM: Subsystem: Up; rated (B), Temporatly Fi at, Stope, Mineral Soil Fi in the same Major I	Lt: Limnetic (2)* Class per Percential (3)* Class per Percential (3)* Class locaded (A), Intermitten lats, Organic Soil Flats Montana Watersh Common	es: RB, UB, AB sses: RB, UB, A tly Flooded (J) s, Lacustrine Fri	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge ee definitions)	(4)/ Classes: Ri es: Permanently I (E), Impounded	B, UB, AB, Flooded (H).
. Estimated re (Circle one) Comments	D). Farmed (F), Artifici elative abundance Un s:	ly Flooded (F), Seasonally F lat (A) HGM Classes: Rive ce: (of similarly classif sknown (use matrix below to d	s: RB, UB, AB, US looded (C), Saturi dine, Depressional fied sites within Rare	S, EM/ Subsystem: Up; rated (B), Temporatly Fi at, Stope, Mineral Soil Fi in the same Major i the same Major i	L: Limnetic (2)/ Class per Percenial (3)/ Class Montana Watersh Common ponse)	es: RB, UB, AB ases: RB, UB, A tly Flooded (J) s, Lacustrine Fri aed Basin, se	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge se definitions) Abunda	(4) Classes: Ri es: Permanently (E), Impounded	B, UB, AB, Flooded (H).
. Estimated re (Circle one) Comments	D). Farmed (F). Artifici elative abundance Un s: addition of AA: ng disturbance:	ly Flooded (F), Seasonally F lat (A) HGM Classes: Rive ce: (of similarly classif sknown (use matrix below to d	s: RB, UB, AB, US looded (C), Satur fine, Depressiona lied sites within Rare	S, EM Subsystem Up; rated (B), Temporally Fi al, Slope, Mineral Soil Fi in the same Major i cle] appropriate res Predomin ed in predominantly	L: Limnetic (2)* Class per Percenial (3)* Class Montana Watersh Common ponse) Land not cultivated,	es: RB, UB, AB ases: RB, UB, A tly Flooded (J) s, Lacustrine Fri and Basin, se	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge se definitions) Abunda within 500 feet of) Land cultivated	(4) Classes: Ries: Permanently (E), Impounded AA d or heavily graze	B, US, AS, Flooded (H; (I), Diked
Estimated re (Circle one) Comments	D). Farmed (F). Artifici elative abundance Un s: addition of AA: ng disturbance:	ly Flooded (F), Seasonally F lat (A) HGM Classes: Rive ce: (of similarly classif sknown (use matrix below to d	etermine [circ	S, EM Subsystem Up; rated (B), Temporally Fi al, Slope, Mineral Soil Fi in the same Major i cle] appropriate res	L: Limnetic (2) Class per Percennial (3) Class per Percennial (3) Class per Percennial (3) Class per Percennial (3) Class per Section (3) Class per Sectio	es: RB, UB, AB sses: RB, UB, A tly Flooded (J) s, Lacustrine Fri ed Basin, se j jacent to (w, but moderately selectively logg t to minor clean	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge se definitions) Abunda within 500 feet of) Land cultivate subject to sub-	(4) Classes: Ri es: Permanently (E), Impounded int AA d or heavily graze stantial fill placer drological alteration	B, US, AB, Flooded (H; (I), Diked and or logged, ment, grading
Estimated re (Circle one) Comments General con 1. Regardii	D). Farmed (F). Artifici elative abundance Un s: addition of AA: ng disturbance:	ly Flooded (F), Seasonally Flat (A) HGM Classes: Rive co: (of similarly classif sknown (use matrix below to decrease) AA y natural state; is not	etermine [circ	S, EM Subsystem Upirated (B), Temporatly Flat, Stope, Mineral Soil Flat, Fredominantly is not graced, hayed, enaise converted; aim reads or buildings.	L: Limnetic (2)* Class per Percennial (3)* Clas per Percennial (3)* Clas per Percennial (3)* Clas looded (A), Intermitten lats, Organic Soil Flats Montana Watersh Common ponse) nant conditions ac Land not cultivated, grazed or hayed or or has been subject	es: RB, UB, AB sses: RB, UB, A tly Flooded (J) s, Lacustrine Fri ed Basin, se j jacent to (w but moderately selectively logg to minor clean or buildings.	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge the definitions) Abunda within 500 feet of) Land cultivate ed; subject to sub- ng; clearing, or hy-	(4) Classes: Ries: Permanently (E), Impounded int AA d or heavily graze stantial fill placer drological alterationity.	B, US, AB, Flooded (H; (I), Diked and or logged, ment, grading
Estimated re (Circle one) Comments General con i. Regardin coccurs and is mai zed, hayed, logge ds or occupied bu not cultivated, but	D). Farmed (F). Artifici elative abundance Unition of AA: ng disturbance: Conditions within	ly Flooded (F), Seasonally Flat (A) HGM Classes: Rive co: (of similarly classif sknown (use matrix below to d AA y natural state; is not ted, does not contain hayed or selectively	etermine [circ	S. E.W. Subsystem: Up; rated (B), Temporarily Flat, Slope, Mineral Soil Flat, Slope, Mineral Soil Flat, Slope, Mineral Soil Flat, Slope, Mineral Soil Flat, Fredominal Soil Predominal Soil Pr	L: Limnetic (2)* Class per Percennial (3)* Class Montana Watersh Common ponse) nant conditions at Land not cultivated grazed or hayed or or has been subject contains few roads	es: RB, UB, AB ases: RB, UB, A tly Flooded (J) s, Lacustrine Fri ed Basin, se diacent to (w but moderately selectively logg t to minor clean or buildings.	/ Subsystem: Littoral B, US/ Water Regim Modifiers: Excavated nge se definitions) Abunda within 500 feet of) Land cultivate ed, subject to sub- dearing, or hy- or building der	(4) Classes: Ries: Permanently (E), Impounded AA d or heavily graze stantial fill placer drological alteratisity. isturbance	B, US, AB, Flooded (H; (I), Diked and or logged, ment, grading
Comments Com	D). Farmed (F), Artificial elative abundance Units: Indition of AA: Ing disturbance: Conditions within aged in predominant d, or otherwise convertidings. It moderately grazed or subject to relatively mirespical alteration; contering grazed or logged; is	ly Flooded (F), Seasonally Flooded (A) HGM Classes: Rive co: (of similarly classif sknown (use matrix below to dia AA y natural state; is not ted, does not contain theyed or selectively nor clearing, fill insifew roads or buildings	etermine [circles and state; it logged, or other contact of the co	S, EM Subsystem Uprated (B), Temporatly Flat, Stope, Mineral Soil Flat, Mineral Soil Fl	ponse) Land not cultivated grazed or hayed or contains few roads Land not cultivated grazed or hayed or contains few roads Low disturbance	es: RB, UB, AB ases: RB, UB, A US, A US, A US, A Lacustrine Fri led Basin, se	/ Subsystem: Littoral B, US/ Water Regim Modifilers: Excavated rige Re definitions) Abunda rithin 500 feet of) Land cultivates subject to sub- clearing, or hy- or building der moderate d	(4) Classes: Ries: Permanently (E), Impounded AA d or heavily graze stantial fill placer dissity. iisturbance pance	B, US, AB, Flooded (H), (I), Diked ed or logged, ment, gridding
. Estimated re (Circle one) Comments . General con I. Regardin . Regardin . Coccurs and is managed, hayed, logged by coccupied but not cultivated, but god, or has been a seement, or hydroic cultivated or heaves betential fill placem throad or building	D). Farmed (F), Artificial elative abundance (Condition of AA: Ing disturbance: Conditions within the conditio	ly Flooded (F), Seasonally Flat (A) HGM Classes: River Co: (of similarly classification) (use matrix below to display the content of the cont	etermine [circle Land manage natural state; i togged, or othe does not contail moderate disturbed in thigh disturb	S. E.W. Subsystem: Up; rated (B), Temporarily Flat, Stope, Mineral Soil Flat, Fredominantly is not grazed, hayed, erwise converted; aim roads or buildings, annoe.	L: Limnetic (2)* Class per Percennial (3)* Class Montana Watersh Common Donse) Land not cultivated grazed or hayed or or has been subject contains few roads low disturbance moderate disturbance high disturbance	es: RB, UB, AB ases: RB, UB, A tly Flooded (J) s, Lacustrine Fri led Basin, se Cliacent to (w but moderately selectively logg to minor clean or buildings.	/ Subsystem: Littoral B, US/ Water Regim Modiflers: Excavated nge se definitions) Abunda within 500 feet of) Land cultivate ed, subject to sub- clearing, or hy- or building der moderate d high disturt	(4) Classes: Ries: Permanently (E), Impounded AA d or heavily graze stantial fill placer dissity. iisturbance pance	B, US, AB, Flooded (H) (I), Diked and or logged, ment, grading
. Estimated re (Circle one) Comments . General con I. Regardin . Regardin . Coccurs and is managed, hayed, logged by coccupied but not cultivated, but god, or has been a seement, or hydroic cultivated or heaves betential fill placem throad or building	D). Farmed (F), Artificial elative abundance (Condition of AA: Ing disturbance: Conditions within the conditio	ly Flooded (F), Seasonally Field (A) HGM Classes: Rive co: (of similarly classifications) (use matrix below to do AA y natural state; is not ted, does not contain theyed or selectively nor clearing, fill insifew roads or buildings subject to relatively	etermine [circle Land manage natural state; i togged, or othe does not contail moderate disturbed in thigh disturb	S. E.W. Subsystem: Up; rated (B), Temporarily Flat, Stope, Mineral Soil Flat, Fredominantly is not grazed, hayed, erwise converted; aim roads or buildings, annoe.	L: Limnetic (2)* Class per Percennial (3)* Class Montana Watersh Common Donse) Land not cultivated grazed or hayed or or has been subject contains few roads low disturbance moderate disturbance high disturbance	es: RB, UB, AB ases: RB, UB, A tly Flooded (J) s, Lacustrine Fri led Basin, se Cliacent to (w but moderately selectively logg to minor clean or buildings.	/ Subsystem: Littoral B, US/ Water Regim Modiflers: Excavated nge se definitions) Abunda within 500 feet of) Land cultivate ed, subject to sub- clearing, or hy- or building der moderate d high disturt	(4) Classes: Ries: Permanently (E), Impounded AA d or heavily graze stantial fill placer dissity. iisturbance pance	B, US, AB, Flooded (H) (I), Diked and or logged, ment, grading
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SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

Pin

 AA is Documented (D Primary or critical hab Secondary habitat (Ils Incidental habitat (list No usable habitat) or Su itat (lis t speci specie	spected t specie les) es)	(S) to (conta C C	ain (circ	le one	based o	on de	glo	conta	ined in i				=					
 Rating (use the concluthis function) 	sions f	rom i ab	ove and	the	matrix	below t	o arrive	at [c	ircle] the	funct	ional po	ints :	and rati	ng (H	high, l	M = n	nodera	te, or L	= low] f	or
Highest Habitat Level		doc./pr	imary	١,	sus/prin	nary	doc./	seco	ndary	sus./secondary			doc./incidental		ental	sus./incid		ntal	None	9
Functional Points and Ra	tina	1 (H)			9 (H)		.8 (M	6)		.7 (1	M)		.5(L)	10	.3 (L	.)		0 (L)	
Sources for documented us			ations, i):	1													
14B, Habitat for plant or a 1. AA is Documented (D Primary or critical hab Secondary habitat (list Incidental habitat (list No usable habitat 11. Rating (use the conclusion)) or Su itat (lis it spec speck	spected t specie les) es)	(S) to	conta	ain (circ	de one	based	n de	finitions	opt	ined in i	ļ.	(0G				í		= low] f	or
this function)		400 (00		T	oue le sie		don	le oce	ondary	Cue	./secon	danı	Tda	:/incid	antal	ene	/incide	ntal	None	
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Functional Points and Ra Sources for documented us		1 (H)	ntions		8 (H)	١.	.7 (N	1)		.6 (M)		(1.21			.1 (1	-)] 0 (L)	_
Substantial (based on an observations of abundant wildlife sign presence of extremely interviews with local based on any observations of scatter common occurrence adequate adjacent up interviews with local based on any observations of scatter common occurrence adequate adjacent up interviews with local based on any observations of scatter common occurrence adequate adjacent up interviews with local based on any observations of scatter common occurrence adequate adjacent up interviews with local based on any observations of abundant present common occurrence.	dant will such a limitin iologist of the forced wild of wildli land fo iologist	dlife #'s as scat, g habita ts with k ollowing dlife gro ife sign od sour ts with k	or high tracks, it featur nowled [check sups or such as ces nowled	nest res no ge of]): indiv s sca	structuot availa the AA iduals of t, tracks	res, ga able in t x relati s, nest	me trait the surr vely few structur	s, et ound spe res, g	c. ling area cies dur game tra	ing pe	fev litti sp int ak perio	w or r le to i arse ervie	no wildl no wildl adjace ws with	ife obs ife sigr nt upla i local t	n nd food biologist	s dur sour s with	ring per ces h know	ak use p	the A	A .
 ii. Wildlife habitat feature (L) rating. Structural diversition of their percent compositions seasonal/intermittent; T/E: 	sity is t	from #1: AA (se	3. For one #10).	class Abl	cover to	o be co	onsidere surface	ed ev	enly dis er durati	tribute ons ar	d, veget e as foll	ated ows:	classe P/P =	s must permar	be with nent/per	in 20	% of e	ach othe	M), or lo er in ten	ms
Structural diversity (see	terrip	oral yrep	TO TO E	Hig		oount ₁	300 11131	1000	0115 101 1	OI LI ICI		Mode		10	-7			Lov)	
#13) Class cover distribution		Eve	n			Unev	en	-		Eve	n	П		Une	ren	\exists		Eve	-	
(all vegetated classes)		1 6 7			5/5		7.5	-	D/D	0.11	7/5		D/D		7/5	Τ,	P/P	S/I	T/E	TA
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	^	P/P	S/I	T/E	A	PIP	3	172	^
Low disturbance at AA	E	E	E	Н	E	E	н	Н	E	Н	н	М	E	Н	М	М	E	н	М	N
(see #12i) Moderate disturbance	н	н	н	н	н	н	н	М	н	н	м	м	н	м	м	L	н	M	L	ī
at AA (see #12i) High disturbance at AA (see #12i)	м	м	М	L	М	м	L	L	М	М	L	L	М	L	L	L	L	(3)	L	L
iii. Rating (use the concl moderate, or L = low) for th			nd ii ab	ove :	and the	matrîx	below t	o arr	ive at [ci	rcie] th	ne funct	ional	points	and rai	ing (E =	exc	eptiona	il, H = h	igh, M	-

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

comments: No Wildlike obs., but seas. use likely.

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14D. General Fish/Aquatic 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 or was not historically used by fish due to lack of habitat, excessive gradient, etc., circle NA here and proceed to the next function. If fish use occurs in the AA but is not desired from a resource management perspective [such as fish use within an irrigation canal], then Habitat Quality [i below] should be marked as "Low", applied accordingly in ii below, and noted in the comments.)

Habitat Quality (circle appropriate AA attributes in matrix to arrive at exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of surface water in AA	Perm	anent / Pere	ennial		onal / Intern		Temporary / Ephemeral		
Cover - % of waterbody in AA containing cover objects such as submerged logs, large rocks & boulders, overhanging banks, floating-leaved vegetation, etc.	>25%	10-25%	<10%	>25%	10-25%	<10%	>25%	10-25%	<10%
Shading - >75% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	E	E	н	Н	н	М	М	М	М
Shading – 50 to 75% of streambank or shoreline within AA contains rip, or wetland scrub-shrub or forested communities	Н	Н	М	М	М	М	М	L	L
Shading - < 50% of streambank or shoreline within AA contains rip, or wetland scrub-shrub or forested communities	Н	М	М	М	L	L	L	L	L

Modified Habitat Quality (Circle the appropriate response to the following question. If answer is Y, then reduce rating in I above by one level [E = H, H = M, M = L, L = L]). Is fish use of the AA precluded or significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic Modified habitat quality rating = (circle) E life support?

III. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M =

moderate, or L = lowl for this function)

Types of fish known or	100011	Modified Habitat Quality (ii)										
suspected within AA	Exceptional	High	Moderate	Low								
Native game fish	1 (E)	.9 (H)	.7 (M)	.5 (M)								
Introduced game fish	.9 (H)	.8 (H)	.6 (M)	.4 (M)								
Non-game fish	.7 (M)	.6 (M)	.5 (M)	.3 (L)								
No fish	.5 (M)	.3 (L)	.2 (L)	.1 (L)								

Comments:

14E. Flood Attenuation: (applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle NA here and proceed to next function.)

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

TUNCTION)						-				
Estimated wetland area in AA subject to periodic flooding		≥ 10 acres		4	<10, >2 acre			<2 acres		۸
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	ı
AA contains no outlet or restricted outlet	1(H)	.9(H)	.6(M)	.8(H)	.7(H)	.5(M)	.4(M)	.3(L)	CSED	ı
AA contains unrestricted outlet	.9(H)	.8(H)	.5(M)	.7(H)	.6(M)	.4(M)	.3(L)	.2(L)	.1(L)	1

II. Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA (circle)? 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, circle NA here and proceed with the evaluation.)

 Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. 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].)	structions 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				5, >1 acre fo	eet)	≤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	1(H)	.9(H)	.8(H)	.8(H)	(M)	.5(M)	.4(M)	.3(L)	.2(L)
Wetlands in AA flood or pond < 5 out of 10 years	.9(H)	.8(H)	.7(M)	.7(M)	.5(M)	.4(M)	.3(L)	.2(L)	.1(L)

Comments:

14G. SedIment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive excess 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, circle NA here and proceed with the evaluation.)

 Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function

Sediment, nutrient, and toxicant input levels within AA	deliver low or comp substantially	to moderate le counds such the y impaired. Mit s or toxicants,	evels of sedime hat other functi	ons are not ion, sources of	nutrients, or toxi use with poter nutrients, or or	r "probable caus cants or AA recontial to deliver his ompounds such apaired, Major se	ses" related to eives or surror gh levels of se that other fun- odimentation, so of eutrophication	sediment, unding land diments, ctions are sources of on present.
% cover of wetland vegetation in AA	>7	70%	<	70%	≥ 70)%	1	0%)
Evidence of flooding or ponding in AA	Yes	No	Yes	No	Yes	No	Yes)	No
AA contains no or restricted outlet	1 (H)	.8 (H)	.7 (M)	.5 (M)	.5 (M)	.4 (M)	(.375)	.2 (L)
AA contains unrestricted outlet	.9 (H)	.7 (M)	.6 (M)	.4 (M)	.4 (M)	.3 (L)	.2(L)	1 (L)

comments: Heavy grazmy - Water very turbid.

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. Y does not apply, circle NA here and proceed to next function)

Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L

= low) for this function.

% Cover of wetland streambank or	Duration of surface water adjacent to rooted vegetation											
shoreline by species with deep, binding rootmasses	permanent / perennial	seasonal / intermittent	Temporary / ephemeral									
≥ 65%	1 (H)	.9 (H)	.7 (M)									
35-64%	.7 (M)	,6-(M)	.5 (M)									
< 35%	.3 (L)	(.2(L)	.1 (L)									
Comments:												

14I. Production Export/Food Chain Support:

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. Factor A = acreage of vegetated component in the AA; Factor B = structural diversity rating from #13; 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 = permanent/perennial; S/I = seasonal/intermittent;

T/E /A= temporary/ephemeral or absent [see instructions for further definitions of these terms].)

A	I	Vegeta	ted comp	onent >	5 acres		Vegetated component 1-5 acres						CVegetated.component <1 acre					}
В	Hi	ah	Mod	erate	L	ow	H	igh	Mod	erate	Lo	w	Hi	gh	Mod	erate		OW)
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	(Yes	No
P/P	1H	.9H	.9H	.8H	.8H	.7M	.9H	.8H	.8H	.7M	.7M	.6M	.7M	.6M	.6M	.4M	_4M	.3L
S/I	.9H	.8H	.8H	.7M	.7M	.6M	.8H	.7M	.7M	.6M	.6M	.5M	.6M	.5M	.5M	.3L	(31)	.2L
T/E/	H8.	.7M	.7M	.6M	.6M	.5M	.7M	.6M	.6M	.5M	.5M	.4M	.5M	.4M	.4M	.2L	.2L	.1L
A																		

Comments:

14J. Groundwater Discharge/Recharge: (Check the indicators in i	ii below that apply to the AA)
I. Discharge Indicators	II. Recharge Indicators
Springs are known or observedVegetation growing during dormant season/droughtWetland occurs at the toe of a natural slopeSeeps are present at the wetland edge	Permeable substrate present without underlying impeding layer Wetland contains inlet but no outlet Other
AA permanently flooded during drought periods	
Wetland contains an outlet, but no inlet	
Other	
 Rating: Use the information from i and ii above and the table belo 	to arrive at [circle] the functional points and rating [H = high, L = low] for this function.
Criteria	Functional Points and Rating

Criteria	Functional Points and Rating
AA is known Discharge/Recharge area or one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	(F(L))
Available Discharge/Recharge information inadequate to rate AA D/R potential	N/A (UTKnown)

Comments:

14K. Uniqueness:

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

Replacement potential	mature (>80)	fen, bog, warm yr-old) forested ation listed as " MNHP	wetland or	rare types (#13) is	s and structu high or cont		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)	1 (H)	.9 (H)	.8 (H)	.8 (H)	.6 (M)	.5 (M)	.5 (M)	.4 (M)	.3 (L)
Moderate disturbance at AA (#12i)	.9 (H)	.8 (H)	.7 (M)	.7 (M)	.5 (M)	.4 (M)	.4 (M)	3(1)	.2 (L)
High disturbance at AA (#12i)	.8 (H)	.7 (M)	.6 (M)	.6 (M)	.4 (M)	.3 (L)	.3 (L)	(.2 (L)	.1 (L)

Comments:

14L. Recreation/Education Potential: I. Is the AA a known rec/ed. site: (circle) Niff yes, rate as [circle] High [1] and go to ii; if no go to iii)

II. Check categories that apply to the AA: ___Educational/scientific study; ___Consumptive rec.; ___Non-consumptive rec.; ___Other

III. Based on the location, diversity, size, and other site attributes, is there strong potential for rec.led. use? Y. (If yes, go to ii, then proceed to iv, if no, then rate as [circle] Low [0.1])

. Rating (use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Ownership	Disturbance at AA (#12)							
	low	moderate	high					
public ownership	1 (H)	.5 (M)	2(L)					
private ownership	.7 (M)	.3 (L)	(.f(L)					

FUNCTION & VALUE SUMMARY & OVERALL RATING

Function & Value Variables	Rating	Actual Functional Points	Possible Function al Points	Functional Units; (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	LOW	0.3	1	
B. MT Natural Heritage Program Species Habitat	LOW	0,2	1	
C. General Wildlife Habitat	LOW	0.3	1	
D. General Fish/Aquatic Habitat	NA	-	-	
E. Flood Attenuation	Low	0.2	1	
F. Short and Long Term Surface Water Storage	MOD	0,6	1	
G. Sediment/Nutrient/Toxicant Removal	LOW	0.3	1	
H. Sediment/Shoreline Stabilization	LOW	0.2	1	
I. Production Export/Food Chain Support	LOW	0.3	1	
J. Groundwater Discharge/Recharge	LOW	0.1	1	
K. Uniqueness	LOW	0.2	1	
L. Recreation/Education Potential	LOW	0.1	1	
Totals:		2.8	11	

25%

OVERALL ANALYSIS AREA (AA) RATING: (Circle appropriate category based on the criteria outlined below)

III (IV

Category I Wetland: (Must satisfy one of the following criteria; if does not meet criteria, 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 Total actual functional points > 80% (round to nearest whole #) of total possible functional points.	
Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; if not satisfied, go to Category IV) Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish/Aquatic 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 Total Actual Functional Points > 65% (round to nearest whole #) of total possible functional points.	
Category III Wetland: (Criteria for Categories I, II or IV not satisfied)	
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; if does not satisfy criteria go to Category III) "Low" rating for Uniqueness; and "Low" rating for Production Export/Food Chain Support; and Total actual functional points < 30% (round to nearest whole #) of total possible functional points	



. Evaluation Date: Mo. 2 - Da	y30 Yr 01 4.E	valuator(s): 56/M7	5 . Wetl	ands/Site	H(s) Albah	055 ₀		
F	29 00		(36)				6136	1701	
Wetland Location(s): I. Legal: il. Approx. Stationing or M	T22 (Nor S; R2)	€£rw;	s 14	;TNo	or S; R	E or W; S	(EDIA	:	
iii. Watershed: 1009		S Reference	ce No. (if applies): _	NA			JEKUD I	_	
b. Purpose of Evaluation: 1Wetlands potentially a 2Mitigation wetlands; pr 3Mitigation wetlands; pr 4Other	ffected by MDT projec re-construction	t 9. A	Vetland size: (total a ssessment area: (A instructions on deter	A, tot., ac.,		ally estimated) sured, e.g. by GP (visually estin (measured, e	nated)		
10. Classification of Wetland ar	nd Aquatic Habitate I	n AA (HG	A according to Brinse	on first col·LISEV	VS accordir	o to Cowardin [19	9791 remaini	no cole)	
HGM Class	System	TAN (FIG	Subsystem	M, 1113 CO., CO.	Class	Water Regime	Modifier	% of A	
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11 11	Palustine		_		UB	SF	Ď	90	
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					-			_	
Estimated relative abundan- (Circle one) Comments:	ce: (of similarly classif nknown	ied sites wi		Montana Watershi Common	ed Basin, se	ee definitions) Abunda	nt		
2. General condition of AA:					-			Northway College	
Regarding disturbance: Conditions within		etermine [c	ircle] appropriate res Predomi	ponse) nant conditions ac	liacent to (w	ithin 500 feet of)	AA		
		natural state logged, or o	aged in predominantly le; is not grazed, hayed, otherwise converted; ontain roads or buildings.	Land not cultivated, grazed or hayed or s or has been subject contains few roads	but moderately selectively logg to minor clean	Land cultivated ed; subject to subs	Land cultivated or heavily grazed or logge subject to substantial fill placement, grad clearing, or hydrological atteration; high ro		
occurs and is managed in predominantly natural state; is not			THE RESERVE OF THE PERSON NAMED IN				-	ment, grading	
azed, hayed, logged, or otherwise conver	ted; does not contain	low distu	rbance	low disturbance		moderate d	sity.	ment, grading	
azed, hayed, logged, or otherwise conver ads or occupied buildings a not cultivated, but moderately grazed or gged; or has been subject to relatively mi	hayed or selectively nor clearing, fill		e disturbance			moderate d	isturbance	ment, grading	
azed, hayed, logged, or otherwise conver ads or occupied buildings. A not outbwated, but moderately grazed or aged; or has been subject to relatively mil acement, or hydrological alteration; conta A cultivated or heavily grazed or logged; substantial fill placement, grading, clearing	hayed or selectively nor clearing, fill ins few roads or buildings. subject to relatively		e disturbance	low disturbance	bance		sity. isturbance pance	ment, grading	
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SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT AL

Alb WATER B.3

 AA is Documented (D) 	ly Listed or Proposed Threatened or Endangered Plants or Animals: D) or Suspected (S) to contain (circle one based on definitions contained in instructions): bitat (list species) D S																			
Primary of critical hat Secondary habitat (list Incidental habitat (list No usable habitat	t specie	es)	PS)		66	P	ipth	9 P	lone											
II. Rating (use the concluthis function)	sions fro	om i ab	ove and	the	matrix be	How to	errive	at (circle	the fund	tional po	ints	and rati	ng [H =	high, N	M = r	noderat	te, or L	= low] fo	x	
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Functional Points and Re						.9 (H)	-	.8 (M		.7			.5 (-	.3 (L	7		0 (L)	
Sources for documented u			ations, r							/				-4				1-1-1	_	
14B, Habitat for plant or I. AA is Documented (I Primary or critical hat Secondary habitat (IIs Incidental habitat (Iis No usable habitat	o) or Sus oitat (list ot specie species	pected speciess) s)	(S) to (conta	ain (circle	b/	ack.	n definit	ions cont	ained in i	nstn	uctions)		=				_,_,		
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Highest Habitat Level		doc./pr	imary	+	sus/prima	ary		seconda		s./secon	ary			surai	SUS.	7	ntai	None		
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iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L = low] for this function)

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

comments: Western Charus frogs obs. (few 2-3) in 2001

40 A/

14D. General Fish/Aquatic 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 or was not historically used by fish due to lack of habitat, excessive gradient, etc., circle NA here and proceed to the next function. If fish use occurs in the AA but is not desired from a resource management perspective [such as fish use within an irrigation canal], then Habitat Quality [i below] should be marked as "Low", applied accordingly in ii below, and noted in the comments.)

Habitat Quality (circle appropriate AA attributes in matrix to arrive at exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of surface water in AA	· Perm	nament / Per	ennial	Seas	onal / Intern	nittent	Temporary / Ephemeral		
Cover - % of waterbody in AA containing cover objects such as submerged logs, large rocks & boulders, overhanging banks, floeting-leaved vegetation, etc.	>25%	10–25%	<10%	>25%	10-25%	<10%	>25%	10-25%	<10%
Shading - >75% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	E	E	н	н	н	М	М	М	М
Shading – 50 to 75% of streambank or shoreline within AA contains rip. or wetland scrub-shrub or forested communities	н	н	М	М	М	М	М	L	L
Shading - < 50% of streambank or shoreline within AA contains rip. or wetland scrub-shrub or forested communities	Н	М	М	М	L	L	٦	L	L

ii. Modified Habitat Quality (Circle the appropriate response to the following question. If answer is Y, then reduce rating in i above by one level [E = H, H = M, M = L, L = L]). Is fish use of the AA precluded or significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or equation if the support?
Y
N
Modified habitat quality rating = (circle)
E
H
M
L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at (circle) the functional points and rating [E = exceptional, H = high, M = moderate, or L = low) for this function)

Types of fish known or	Modified Habitat Quality (ii)								
suspected within AA	Exceptional	High	Moderate	Low					
Native game fish	1 (E)	.9 (H)	.7 (M)	.5 (M)					
Introduced game fish	.9 (H)	.8 (H)	.6 (M)	.4 (M)					
Non-game fish	.7 (M)	.6 (M)	.5 (M)	.3 (L)					
No fish	.5 (M)	.3 (L)	.2 (L)	.1 (L)					

Comments:

14E. Flood Attenuation: (applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle NA here and proceed to next function.)

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

Turi Guorij									
Estimated wetland area in AA subject to periodic flooding	T	≥ 10 acres			<10, >2 acre	s	(<2 acres	
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains no outlet or restricted outlet	1(H)	.9(H)	.6(M)	.8(H)	.7(H)	.5(M)	.4(M)	.3(L)	(2)(L))
AA contains unrestricted outlet	9(H)	8(H)	.5(M)	.7(H)	.6(M)	.4(M)	.3(L)	.2(L)	.1(L)

II. Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA (circle)? Y a 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, circle NA here and proceed with the evaluation.)

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. 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].

instructions for further definitions of these terms (.)					$\overline{}$	_			
Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding		>5 acre fee	4	⟨.5	, >1 acre	(eet)	:	≤1 acre foot	t
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	SI	T/E	P/P	SA	T/E
Wetlands in AA flood or pond ≥ 5 out of 10 years	1(H)	.9(H)	.8(H)	.8(H)	(.6(M)	.5(M)	.4(M)	.3(L)	.2(L)
Wetlands in AA flood or pond < 5 out of 10 years	.9(H)	.8(H)	.7(M)	.7(M)	.5(M)	.4(M)	.3(L)	.2(L)	.1(L)

Comments:

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive excess 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, circle NA here and proceed with the evaluation.)

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

Sediment, nutrient, and toxicant input levels within AA	deliver low or comp substantial	deliver low to moderate levels of sediments, nutrients, or compounds such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present. development for "proba nutrients, or toxicants or use with potential to do nutrients, or compound substantially impaired."						waterbodies in need of TMDL causes" related to sediment, A receives or surrounding land er high levels of sediments, such that other functions are jor sedimentation, sources of ans of eutrophication present.				
% cover of wetland vegetation in AA	>	70%	<	70%	≥ 70	0%	< 7	0%)				
Evidence of flooding or ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No				
AA contains no or restricted outlet	1 (H)	.8 (H)	.7 (M)	.5 (M)	.5 (M)	.4 (M)	(3(L))	.2 (L)				
AA contains unrestricted outlet	.9 (H)	.7 (M)	.6 (M)	.4 (M)	.4 (M)	.3 (L)	.2 (L)	.1 (L)				

comments: Aeavily grazed - water furbid.

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 does not apply, circle NA here and proceed to next function)

I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [E = exceptional, H = high, M = moderate, or L = load for this function

% Cover of wetland streambank or	Duration of surface water adjacent to rooted vegetation							
shoreline by species with deep, binding rootmasses	permanent / perennial	seasonal / intermittent	Temporary / ephemeral					
≥ 65%	1 (H)	.9 (H)	.7 (M)					
35-64%	.7 (M)	.6 (M)	.5 (M)					
< 35%	.3 (L)	(212)	.1 (L)					

Comments:

14l. Production Export/Food Chain Support:

Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function. Factor A = acreage of vegetated component in the AA; Factor B = structural diversity rating from #13; 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 = permanent/perennial; S/I = seasonal/intermittent;

Α		Vegeta	ited comp	conent >	5 acres			Vegeta	ted comp	conent 1	-5 acres			Vegeta	nted com	ponent ·	<1 acre	_
В	Hi	gh	Mod	erate	L	ow	H	igh	Mod	erate	Lo	w	H	gh	Mode	erate		w)
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	(Yes_	No
P/P	1H	.9H	.9H	.8H	.8H	.7M	.9H	.8H	.8H	.7M	.7M	.6M	.7M	.6M	.6M	.4M	.4M	.3L
S/I	.9H	.8H	.8H	.7M	.7M	.6M	.8H	.7M	.7M	.6M	.6M	.5M	.6M	.5M	.5M	.3L	(3L)	.2L
T/E/	.8H	.7M	.7M	.6M	.6M	.5M	.7M	.6M	.6M	.5M	.5M	.4M	.5M	.4M	.4M	.2L	.20	.1L
Δ.				1	1		1	l .			1					1	1	

Comments:

-		_	
14	J. Groundwater Discharge/Recharge: (Check the indicators in i & ii	elo	w that apply to the AA)
	I. Discharge Indicators	i. F	Recharge Indicators
	Springs are known or observed		Permeable substrate present without underlying impeding layer
	Vegetation growing during dormant season/drought		Wetland contains inlet but no outlet
	Wetland occurs at the toe of a natural slope		Other
	Seeps are present at the wetland edge		
	AA permanently flooded during drought periods		
	Wetland contains an outlet, but no inlet		
	Other		
III.	Rating: Use the information from i and ii above and the table below to	arri	ve at [circle] the functional points and rating [H = high, L = low] for this function.
			F - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -

Criteria	Functional Points and Rating
AA is known Discharge/Recharge area or one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	(.1 (L))
Available Discharge/Recharge information inadequate to rate AA D/R potential	N/A (Unknown)

Comments:

14K. Uniqueness:

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

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MNHP			rare type (#13) is	ot contain pre s and structu high or cont listed as "S2"	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)	1 (H)	.9 (H)	.8 (H)	.8 (H)	.6 (M)	.5 (M)	.5 (M)	.4 (M)	.3 (L)
Moderate disturbance at AA (#12i)	.9 (H)	.8 (H)	.7 (M)	.7 (M)	.5 (M)	.4 (M)	.4 (M)	3(1)	.2 (L)
High disturbance at AA (#12i)	.8 (H)	.7 (M)	.6 (M)	.6 (M)	.4 (M)	.3 (L)	.3 (L)	(.2 (L)	.1 (L)

Comments:

14L. Recreation/Education Potential: i. Is the AA a known rec./ed. site: (circle) Y N If yes, rate as [circle] High [1] and go to ii; if no go to iii)

ii. Check categories that apply to the AA: __Educational/scientific study; __Consumptive rec.; __Non-consumptive rec.; __Ot

Based on the location, diversity, size, and other site attributes, is there strong potential for rec./ed. use? Y N
 (If yes, go to ii, then proceed to iv, if no, then rate as [circle] Low [0.1])

Iv. Rating (use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function.

Ownership	Disturbence at AA (#12)								
	low	moderate	high						
public ownership	1 (H)	.5 (M)	24)						
private ownership	.7 (M)	.3 (L)	(1 (L))						

LAND & WATER B-42 Alb

FUNCTION & VALUE SUMMARY & OVERALL RATING

Function & Value Variables	Rating	Actual Functional Points	Possible Function al Points	Functional Units; (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	LOW	0.3	1	
B. MT Natural Heritage Program Species Habitat	LOW	0.1	1	
C. General Wildlife Habitat	LOW	0.3	1	
D. General Fish/Aquatic Habitat	NA		_	
E. Flood Attenuation	LOW	0.2	1	
F. Short and Long Term Surface Water Storage	MOD	0.6	1	
G. Sediment/Nutrient/Toxicant Removal	LOW	0.3	1	
H. Sediment/Shoreline Stabilization	LOW	0.2	1	
I. Production Export/Food Chain Support	LOW	0.3	1	
J. Groundwater Discharge/Recharge	LOW	0.1	1	
K. Uniqueness	LOW	0.2	1	
L. Recreation/Education Potential	LOW	0.1	1	
Totals:		2.7	11	

OVERALL ANALYSIS AREA (AA) RATING: (Circle appropriate category based on the criteria outlined below)

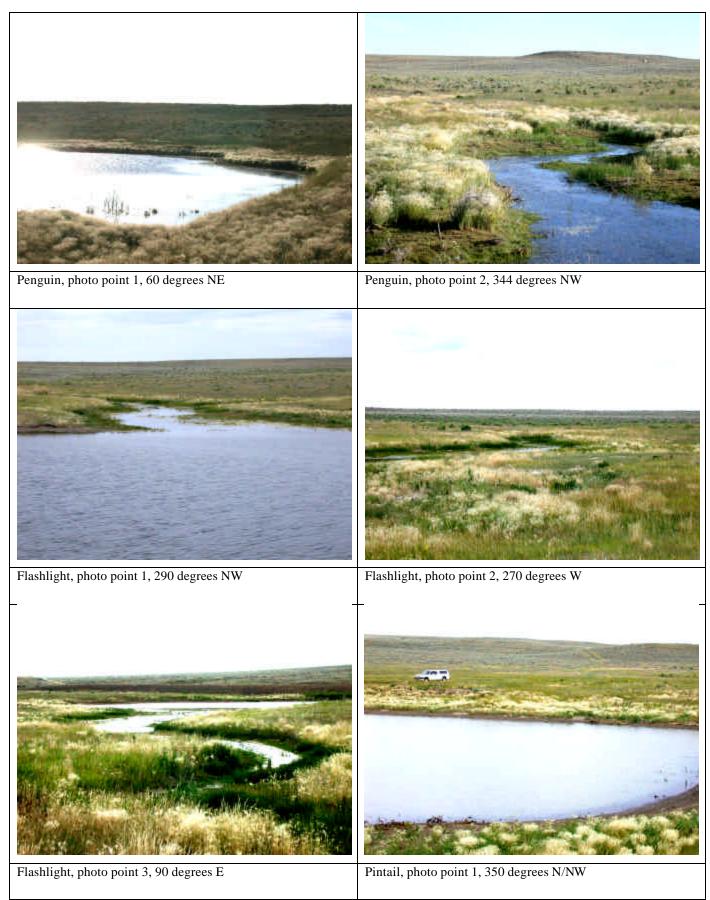
Category I Wetland: (Must satisfy one of the following criteria; if does not meet criteria, go to Category II) Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; or Score of 1 functional point for Uniqueness; or Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; or Total actual functional points > 80% (round to nearest whole #) of total possible functional points.
Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; if not satisfied, go to Category IV) Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; or Score of .9 or 1 functional point for General Wildlife Habitat; or Score of .9 or 1 functional point for General Fish/Aquatic 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 Total Actual Functional Points > 65% (round to nearest whole #) of total possible functional points.
Category III Wetland: (Criteria for Categories I, II or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; if does not satisfy criteria go to Category III) "Low" rating for Uniqueness; and "Low" rating for Production Export/Food Chain Support; and Total actual functional points < 30% (round to nearest whole #) of total possible functional points

Appendix C

REPRESENTATIVE PHOTOGRAPHS 2002 AERIAL PHOTOGRAPHS

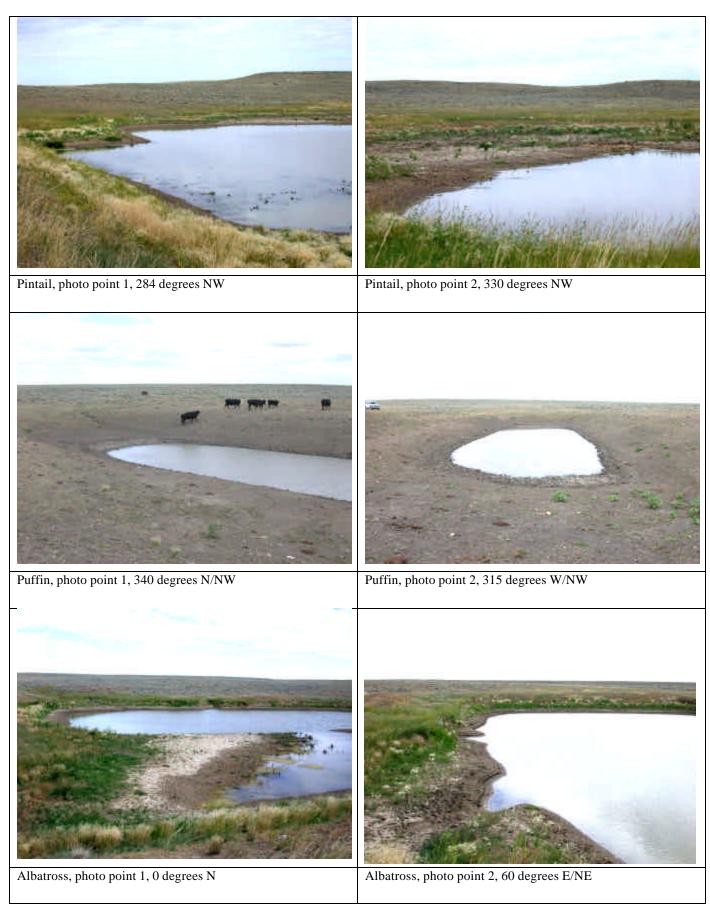
MDT Wetland Mitigation Monitoring Fourchette Creek Phillips County, Montana





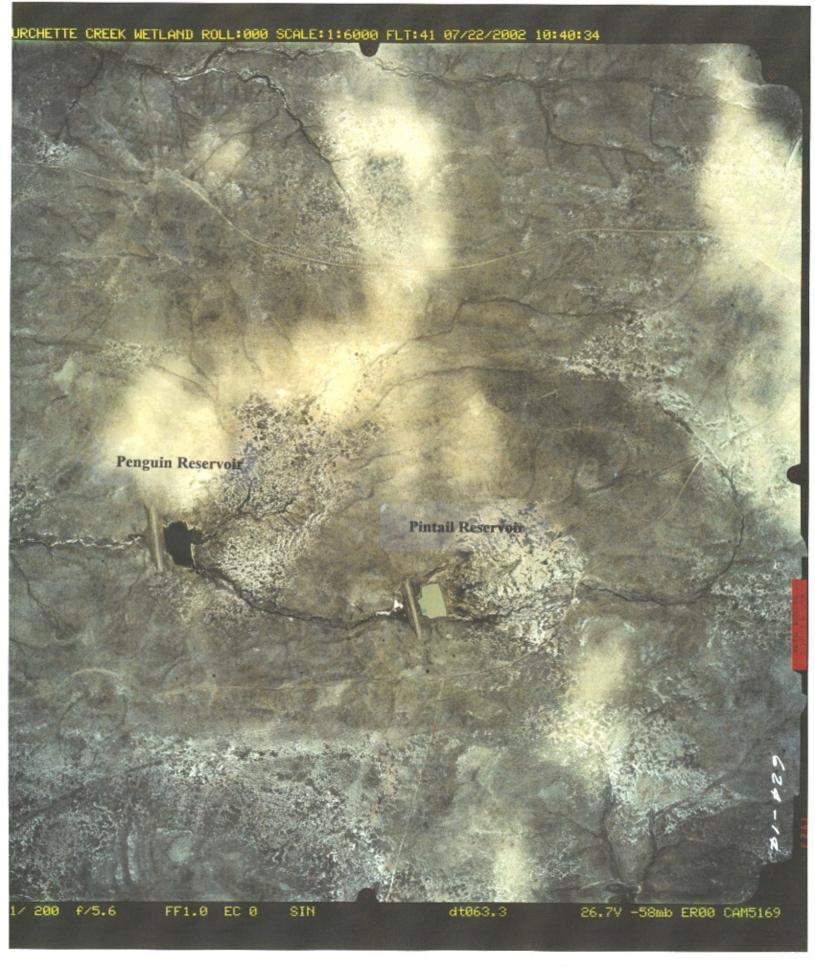
2002 Fourchette Creek



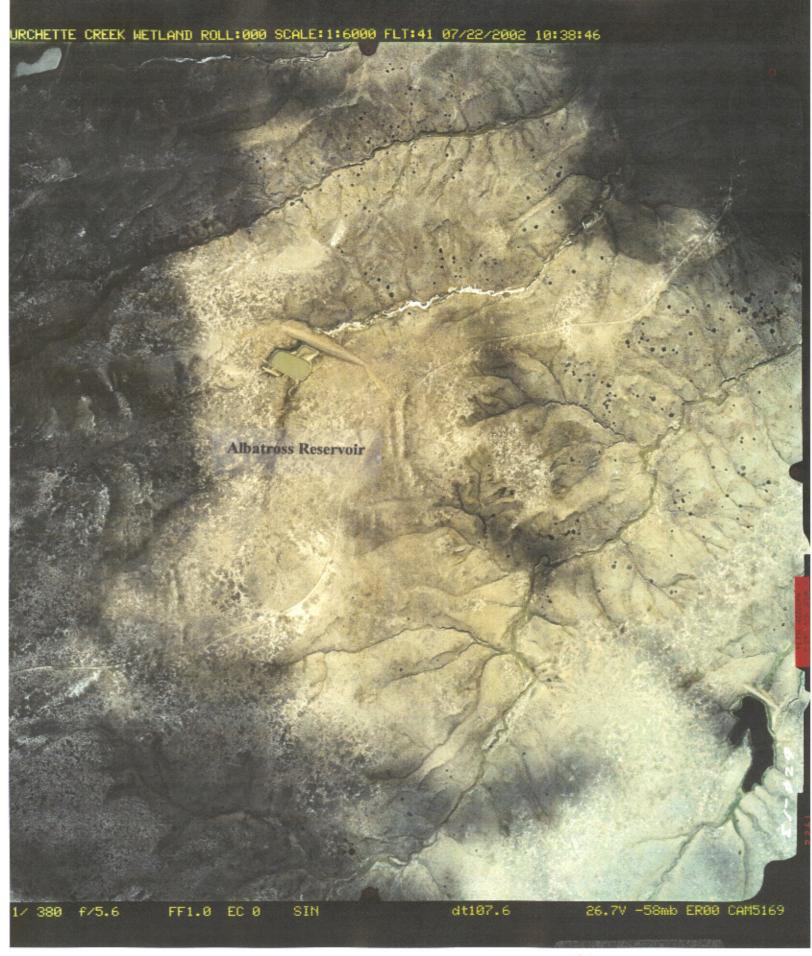


2002 Fourchette Creek





JOB: FOURCHETTE CREEK WETLAND ROLL: 000 SCALE: 1:6000 FLT: 41 07/22/2002 10:41:37 Flashlight Reservoir FS100 1/ 160 f/5.6 FF1.0 EC 0 dt046.4 26.7V -58mb ER00 C



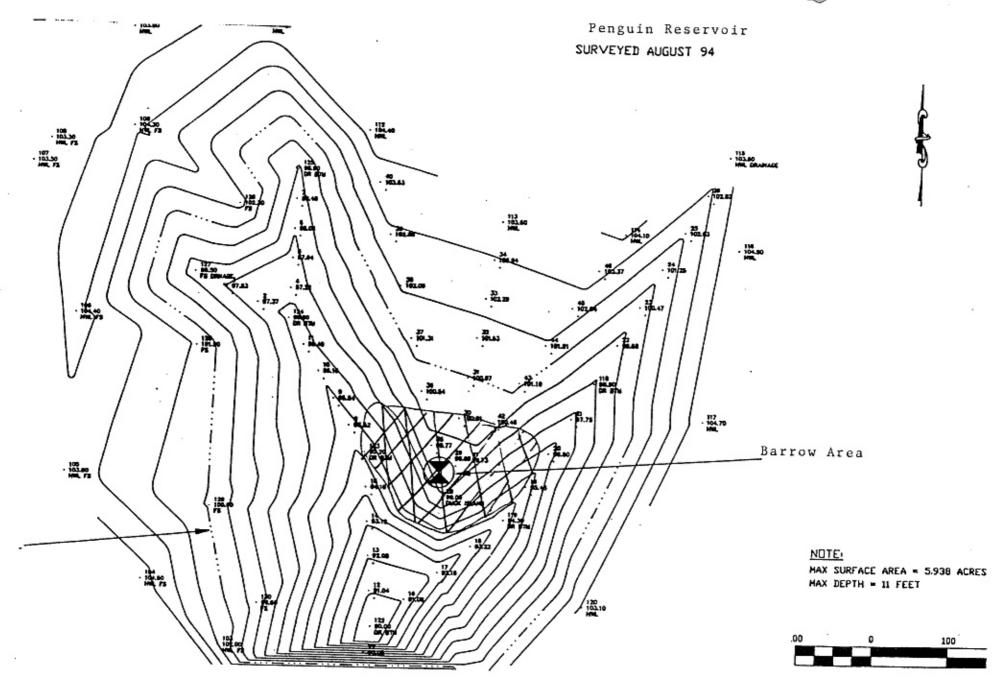
JOB: FOURCHETTE CREEK WETLAND ROLL: 000 SCALE: 1:6000 FLT: 41 07/22/2002 10:19:31 Puffin Reservoir dt280.2 FS100 FF1.0 EC 0 SIN

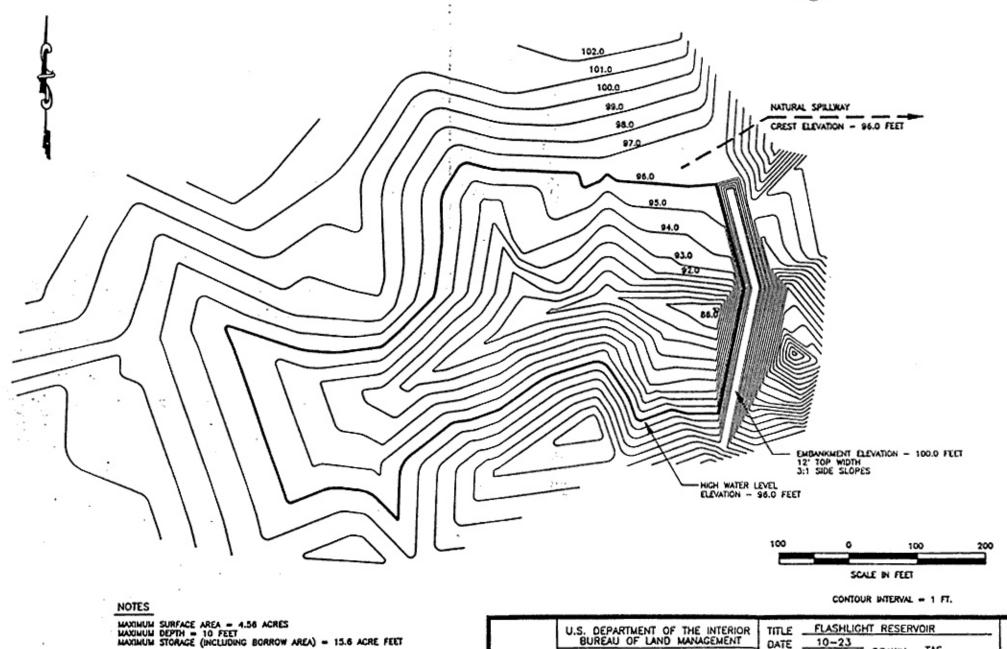
Appendix D

CONCEPTUAL SITE LAYOUTS

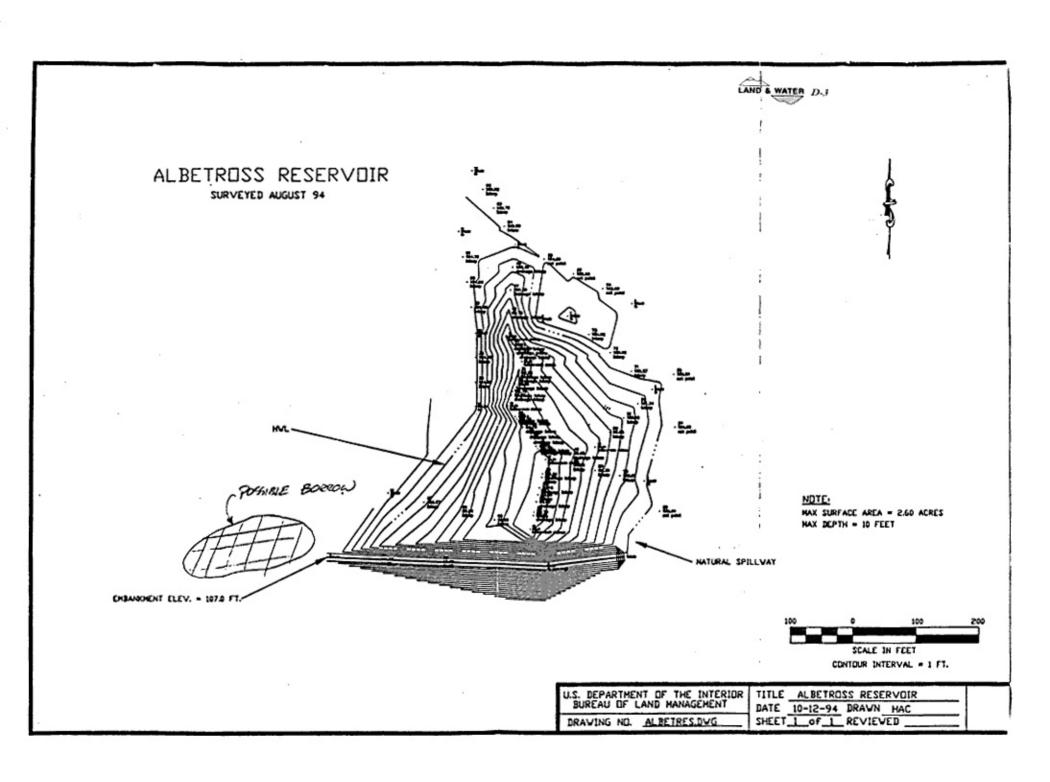
MDT Wetland Mitigation Monitoring Fourchette Creek Phillips County, Montana

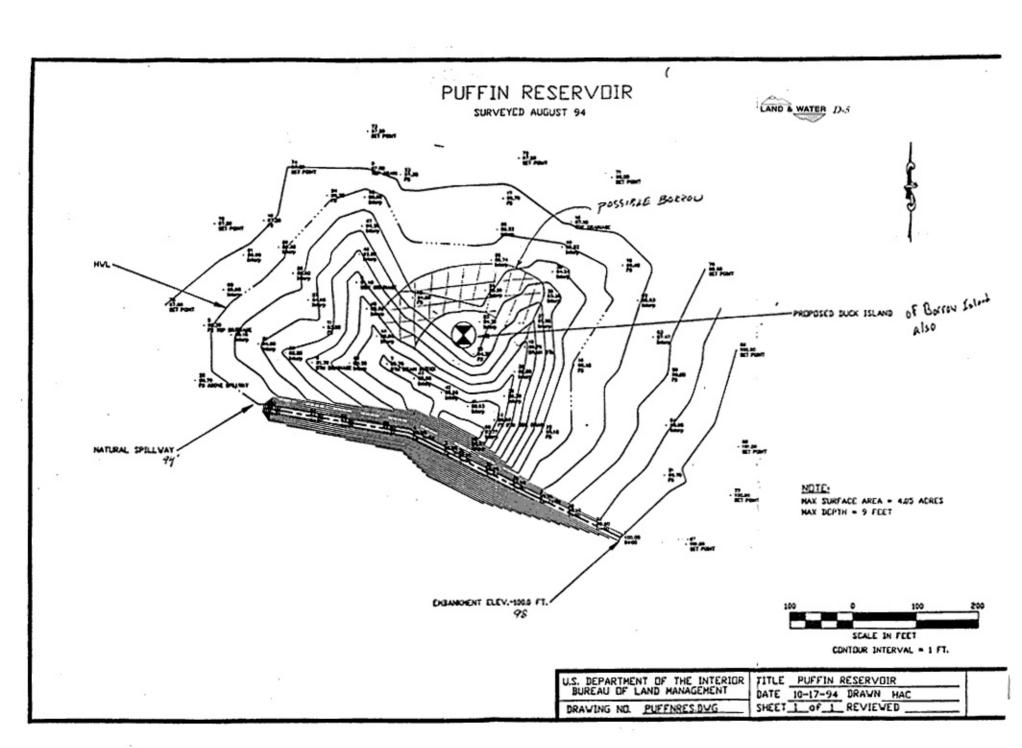






U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT 10-23 DATE SHEET _1 of _1 DRAWN _TAS DRAWING NO. __FLASHLT.DWG DESIGNED_ REVIEWED APPROVED





Appendix E

BIRD SURVEY PROTOCOL
MACROINVERTEBRATE SAMPLING PROTOCOL
GPS PROTOCOL

MDT Wetland Mitigation Monitoring Fourchette Creek Phillips County, Montana



BIRD SURVEY PROTOCOL

The following is an outline of the MDT Wetland Mitigation Site Monitoring Bird Survey Protocol. Though each site is vastly different, the bird survey data collection methods must be standardized to a certain degree to increase repeatability. An Area Search within a restricted time frame will be used to collect the following data: a bird species list, density, behavior, and habitat-type use. There will be some decisions that team members must make to fit the protocol to their particular site. Each of the following sections and the desired result describes the protocol established to reflect bird species use over time.

Species Use within the Mitigation Wetland: Survey Method

Result: To conduct a bird survey of the wetland mitigation site within a restricted period of time and the budget allotment.

Sites that can be circumambulated or walked throughout.

These types of sites will include ponds, enhanced historic river channels, wet meadows, and any area that can be surveyed from the entirety of its perimeter or walked throughout. If the wetland is not uncomfortably inundated, conduct several "meandering" transects through the site in an orderly fashion (record the number and approximate location/direction of the transects in the field notebook; they do not have to be formalized or staked). If a very small portion of the site cannot be crossed due to inundation, this method will also apply. Though the sizes of the site vary, each site will require surveying to the fullest extent possible within a set time limit. The optimum times to conduct the survey are in the morning hours. Conduct the survey from sunrise to no later than 11:00 AM. (Note: some sites may have to be surveyed in the late afternoon or evening due to time constraints or weather; if this is the case, record the time of day and include this information in your report discussion.) If the survey is completed before 11:00 AM and no additions are being made to the list, then the task is complete. The overall limiting factor regarding the number of hours that are spent conducting this survey is the number of budgeted hours; this determination must be made by site by each individual.

In many cases, binoculars will be the only instrument that is needed to identify and count the birds using the wetland. If the wetland includes deep water habitat that can not be assessed with binoculars, then a scope and tripod are necessary. If this is the case, establish as many lookout posts as necessary from key vantage points to collect the data. Depending on the size of the open water, more time may be spent viewing the mitigation area from these vantage points than is spent walking the peripheries of more shallow-water wetlands.

Sites that cannot be circumambulated.

These types of sites will include large-bodied waters, such as reservoirs, particularly those with deep water habitat (>6 ft) close to the shore and no wetland development in that area of the shoreline. If one area of the reservoir was graded in such a way to create or enhance the development of a wetland, then that will be the area in which the ambulatory bird survey is conducted. The team member must then determine the length of the shoreline that will be surveyed during each visit.



As stated above in the ambulatory site section, these large sites most likely will have to be surveyed from established vantage points.

Species Use within the Mitigation Wetland: Data Recording

Result: A complete list of bird species using the site, an estimate of bird densities and associated behaviors, and identification of habitat use.

1. Bird Species List

Record the bird species on the Bird Survey - Field Data Sheet using the appropriate 4-letter code of the common name. The coding uses the first two letters of the first two words of the birds' common name or if one name, the first four (4) letters. For example, mourning dove is coded MODO and mallard is MALL. If an unknown individual is observed, use the following protocol and define your abbreviation at the bottom of the field data sheet: unknown shorebird: UNSB; unknown brown bird (UNBR); unknown warbler (UNWA); unknown waterfowl (UNWF). For a flyover of a flock of unknown species, use a term that describes the birds' general characteristics and include the approximate flock size in parentheses; do not fill in the habitat column. For example, a flock of black, medium-sized birds could be coded: UNBB / FO (25). You may also note on the data sheet if that particular individual is using a constructed nest box.

2. Bird Density

In the office, sum the Bird Survey – Field Data Sheet data by species and by behavior. Record this data in the Bird Summary Table.

3. Bird Behavior

Bird behavior must be identified by what is known. When a species is simply observed, the behavior that it is immediately exhibiting is what is recorded. Only behaviors that have discreet descriptive terms should be used. The following terms are recommended: breeding pair individual (BP); foraging (F); flyover (FO); loafing (L; e.g. sleeping, roosting, floating with head tucked under wing are loafing behaviors); and, nesting (N). If more behaviors are observed that do have a specific descriptive word, use them and we will add it to the protocol; descriptive words or phrases such as "migrating" or "living on site" are unknown behaviors.

4. Bird Species Habitat Use

We are interested in what bird species are using which particular habitat within the mitigation wetlands. This data is easily collected by simply recording what habitat the species was initially observed. Use the following broad category habitat classifications: aquatic bed (AB - rooted floating, floating-leaved, or submergent vegetation); forested (FO); marsh (MA – cattail, bulrush, emergent vegetation, etc. with surface water); open water (OW – primarily unvegetated); scrubshrub (SS); and upland buffer (UP); wet meadow (WM – sedges, rushes, grasses with little to no surface water). If other categories are observed onsite that are not suggested here, we will make a new category next year.



E-2

AQUATIC INVERTEBRATE SAMPLING PROTOCOL

Equipment List

- D-frame sampling net with 1 mm mesh. Wildco is a good source of these.
- Spare net.
- 1-liter plastic sample jars, wide-mouth. VWR has these: catalog #36319-707.
- 95% ethanol: Northwest Scientific in Billings carries this.

All these other things are generally available at hardware or sporting goods stores. Make the labels on an ink jet printer preferably.

- hip waders.
- pre-printed sample labels (printed on Rite-in-the-Rain or other coated paper, two labels per sample).
- pencil.
- plastic pail (3 or 5 gallon).
- large tea strainer or framed screen.
- towel.
- tape for affixing label to jar.
- cooler with ice for sample storage.

Site Selection

Select the sampling site with these considerations in mind:

- Select a site accessible with hip waders. If substrates are too soft, lay a wide board down to walk on.
- Determine a location that is representative of the overall condition of the wetland.

Sampling

Wetland invertebrates inhabit the substrate, the water column, the stems and leaves of aquatic vegetation, and the water surface. Your goal is to sweep the collecting net through each of these habitat types, and then to combine the resulting samples into the 1-liter sample jar.

Dip out about a gallon of water into the pail. Pour about a cup of ethanol into the sample jar. Fill out the top half of the sample labels, using pencil, since ink will dissolve in the ethanol.

Ideally, you can sample a swath of water column from near-shore outward to a depth of approximately 3 feet with a long sweep of the net, keeping the net at about half the depth of the water throughout the sweep. Sweep the water surface as well. Pull the net through a vegetated area, beneath the water surface, for at least a meter of distance.

Sample the substrate by pulling the net along the bottom, bumping it against the substrate several times as you pull.



This step is optional, but it gives you a chance to <u>see</u> that you've collected some invertebrates. Rinse the net out into the bucket, and look for insects, crustaceans, etc. If necessary, repeat the sampling process in a nearby location, and add the net contents to the bucket. Remember to sample all four environments.

Sieve the contents of the bucket through the straining device and pour or carefully scrape the contents of the strainer into the sample jar.

If you skip the bucket-and-sieve steps, simply lift handfuls of material out of the sampling net into the jars. In either case, please include some muck or mud and some vegetation in the jar. Often, you will have collected a large amount of vegetable material. If this is the case, lift out handfuls of material from the sieve into the jar, until the jar is about half full. Please limit material you include in the sample, so that there is only a single jar for each sample.

Top off the sample jar with enough ethanol to cover all the material in the jar. Leave as little headroom as possible.

It is not necessary to sample habitats in any specified order. Keep in mind that disturbing the habitats prior to sampling will chase off the animals you are trying to capture.

Complete the sample labels. Place one label inside the sample jar and tape the other label securely to the outside of the jar. Dry the jar before attaching the outer label if necessary. In some situations, it may be necessary to collect more than one sample at a site. If you take multiple samples from the same site, clearly indicate this by using individual sample numbers, along with the total number of samples collected at the site (e.g. Sample #3 of 5 total samples).

Photograph the sampled site.

Sample Handling/Shipping

- In the field, keep collected samples cool by storing them in a cooler. Only a small amount of ice is necessary.
- Inventory all samples, preparing a list of all sites and enumerating all samples, before shipping or delivering to the laboratory.
- Deliver samples to Rhithron.



GPS Mapping and Aerial Photo Referencing Procedure

The wetland boundaries, photograph location points and sampling locations were field located with mapping grade Trimble Geo III GPS units. The data was collected with a minimum of three positions per feature using Course/Acquisition code. The collected data was then transferred to a PC and differentially corrected to the nearest operating Community Base Station. The corrected data was then exported to ACAD drawings in Montana State Plain Coordinates NAD 83 international feet.

The GPS positions collected and processed had a 68% accuracy of 7 feet except in isolated areas of Tasks .008 and .011, where it went to 12 feet. This is within the 1 to 5 meter range listed as the expected accuracy of the mapping grade Trimble GPS.

Aerial reference points were used to position the aerial photographs. This positioning did not remove the distortion inherent in all photos; this imagery is to be used as a visual aide only. The located wetland boundaries were given a final review by the wetland biologist and adjustments were made if necessary.

Any relationship of features located to easement or property lines are not to be construed from these figures. These relationships can only be determined with a survey by a licensed surveyor.

