



**WETLAND MITIGATION FOR THE DEYO RESERVOIR PROJECT**

**2011**



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**Idaho Department of Fish and Game**

**IDFG 11-118  
December 2011**

## WETLAND MITIGATION FOR THE DEYO RESERVOIR PROJECT

### History

The Idaho Department of Fish and Game (IDFG), supported by community efforts, is proposing to construct a 55 acre fishing reservoir near Weippe, Idaho. This reservoir, named Deyo Reservoir, will provide both an intensive public recreational fishery and an economic boost to the local economy with minimal negative biological impacts. The proposed reservoir is in concert with overall regional and statewide management direction (2007-2012 Fisheries Management Plan and the Departments 15 year strategic plan) to develop small fishing reservoirs throughout the state with emphasis on sites that will connect youth to the outdoors and fishing and enhance rural economics.

Management plans for Deyo Reservoir include a “two-story” fishery, managing for both cold and warm water species. Sport fishing would likely include stocking sterile, catchable size rainbow trout for a “put and take” fishery, stocking fingerling westslope cutthroat for a “put and grow” fishery, and developing a self-sustaining warm-water fishery. These management practices would allow increased utilization of hatchery fish to support consumptive oriented fisheries while eliminating impacts of stocking hatchery fish on native fish in rivers and streams.

Currently, there are limited opportunities near the proposed Deyo reservoir site for family fishing and boating opportunities. If completed, this reservoir will provide a great family setting with easy year round access, a consumptive oriented fishery, picnic and camping sites, hiking trails, and a safe fishing and boating experience. There are no other water bodies within a 50 mile radius from the proposed Deyo Reservoir site that would provide these same types of opportunities. Developing this reservoir would help accomplish the Department’s goals, as indicated in their 15 year strategic plan, to better connect youth to the outdoors and fishing.

In the last 25 years, native fish populations have been managed by implementing progressively increasing restrictive sport angling regulations. These restrictive angling regulations have included: catch and release, reduced bag limits, reduced bag limits with minimum size, removal of bait, shortened season, and barbless hooks. These regulations have been effective in providing needed conservation on native westslope cutthroat trout populations. The entire North Fork Clearwater River (upstream of Dworshak Reservoir), Lochsa River and Selway river basins are currently managed under wild trout guidelines with some combination of restrictive regulations designed to preserve, protect and perpetuate the native fisheries. However, restrictive regulations aimed at conserving wild trout have displaced some anglers. The 2006 IDFG Angler Opinion survey indicated that about 50% of anglers would not fish waters where they could not harvest fish. Continued broad-based support for native fish conservation may well depend on development and management of alternative harvest oriented fishing opportunities.

It is anticipated that, if constructed, Deyo Reservoir would attract 20,000 to 40,000 hours of angling effort annually and potentially bring \$300,000 to \$800,000 to the local community annually. Rural communities in North Central Idaho have long depended on the timber industry to support their economy. However, the timber industry and rural timber based economies have been depressed for the past decades. Rural communities are relying more often on recreation for economic support. It is anticipated that the construction of Deyo Reservoir would provide a needed boost to the local economy.

The property around the proposed Deyo Reservoir site was Gift Deeded to the IDFG from private landowners for the purpose of creating a reservoir that will provide fishing and other outdoor recreation opportunities and support outdoor tourism and recreation in rural Clearwater County, Idaho. This deed will revert back to the families if construction of Deyo Reservoir does not begin by December 31, 2012. This obviously has brought a sense of urgency to construct this reservoir. The inability to begin construction of this reservoir by the deadline date will eliminate an opportunity to create a unique fishing experience in an area that would benefit greatly from it.

## **Wetland Mitigation Plan**

### Current Wetland Condition

A wetland delineation survey within the proposed project area for Deyo Reservoir was conducted on January 11, 2010 under direction of Kevin Traylor (NRCS). The wetland area was determined using a combination of hydrophytic vegetation distribution, hydrology, and the presence of hydric soils following procedures as outlined in the 1987 Corps of Engineers Wetland Delineation Manual. Through this process it was determined that the current wetland area within the project area occupies 38.3 acres, which includes primarily Palustrine Emergent wetland (PEM) and a few acres of Palustrine Scrub-Shrub (PSS) wetland (Figure 1). The delineated wetland area is dominated by reed canary grass (about 90%) with surface water occurring for less than three months on all but about five of these acres. Most of this wetland is heavily grazed and by late July, much of the delineated wetland becomes very dry in nature (Figure 1). The upper half of the wetland area was historically ditched so there are wetland characteristics, but many facultative upland species occupy the area. The upper one-third of the delineated wetland was historically converted to hay fields as ditch lines were constructed on either side to drain the ground, followed by tilling/bulldozing for leveling and planting purposes. This ground is currently being managed as hay fields as crops are harvested annually. Following harvest, cattle are turned loose on this ground for grazing. Much of this hay field still maintains wetland characteristics with reed canary grass, meadow foxtail, camas, and other wetland species occurring sporadically throughout, although this wetlands functioning potential has been greatly reduced. If the proposed reservoir is constructed, it will flood the majority of delineated wetland (29.7 acres) downstream of the hay fields and create a reservoir about 55.9 acres in size (Figure 2). This change would likely result in a Lucustrine System on 43.9 acres and a PEM/PSS on 12.8 acres. The 12.8 acres will maintain average depths of less than 3 ft, which would be considered wetland habitat (Figure 2). As a result, the construction of this reservoir would result in a net loss of 16.9 acres of wetland.

### Mitigation for Lost Wetland

To mitigate for the loss of the existing wetlands, the Deyo Reservoir project will improve the functioning value of the wetlands in and around the hay fields (9.1 acres) on the upper end of the project area (Figure 2). This land is owned by IDFG and would be managed in the future in a manner to benefit wetland plant and animal species. This site was chosen because it is owned by the IDFG, it is close to the flooded wetland, and it has considerable potential for improvement (it is currently a managed hay field). Few other opportunities occur on this property to create new or improve the current wetlands. The project plan includes redirecting the currently channelized stream back into its historic floodplain and through a series of three constructed ponds of various sizes (approximately 1 acre each) and with varying depths (< 5 ft - for permanent and ephemeral water retention) that will fill during peak flows. Each pond will be irregularly contoured to maximize edge for wildlife breeding, foraging, and hiding cover. Logs

and coarse woody debris will be added to the ponds for increased underwater structure. Islands will be added to provide protected dry-land nesting areas. The shorelines and shallows of the ponds will be planted with wetland aquatic and emergent species, and with suitable shrubs and tree species for increased plant species diversity. Between the ponds and the primary reservoir will be an area designated for seasonal flooding which will be planted and maintained with emergent vegetation. Vegetative corridors among habitat types and buffers around ponds will be maintained and/or created for wildlife benefit. The wetlands will be designed to partially dry each year in order to provide the most beneficial habitat for native amphibians and migratory shorebirds, but still retain water in deeper pools year-round to benefit amphibians, invertebrates, and other avifauna. All of this work will be encompassed into a five-year plan. Hydro-period and species composition and a plan to limit potential non-native species will all be considered. These mitigation actions would greatly improve another 9.1 acres of wetland, bringing the total area of high functioning wetland to 21.9 acres. The specifications for the immediate wetland work to be completed are listed in Appendix A.

Although these activities would result in a net decline in 16.9 acres of wetland, the wetland would change from one that is only seasonally wet and dominated by a reed canary grass, an exotic invasive with little wildlife value, to one that would experience year round surface water and provide vegetation that was more desirable to waterfowl, amphibians and other wetland animals. The proposed functioning values of the developed wetland are as follows:

#### Proposed Wetland Functioning Values

We propose to replace the reed canary grass monoculture with a far more diverse wetland complex. The functioning values of the proposed wetlands will be substantially greater than what is being provided by the existing wetlands. These include the following hydrologic, water quality, educational/recreational, and ecological values.

##### Hydrologic:

- ameliorating peak flooding
- increasing groundwater infiltration

##### Water quality

- nutrient uptake
- accretion of sediment

##### Educational/Recreational

- will provide opportunities for outdoor classrooms
- will provide opportunities for wildlife viewing and appreciation

##### Ecological

- enhanced nesting, breeding, and foraging cover for birds, amphibians, reptiles, and invertebrates
- corridors and buffers for terrestrial wildlife to safely travel among habitats
- varying depths of pools and underwater structure for benthic community
- increased diversity and abundance of native flora
- seasonal marsh areas would be utilized by migrating shorebirds

Using the 2008 MDT Montana Wetland Assessment Method Form, IDFG wildlife staff determined the quality (functioning value) of the wetland in its current state and compared it to what we believed would be the quality of the wetland after the reservoir and wetland mitigation area was constructed. Using this assessment, we determined that functioning value of the current wetland is 360% and can be classified as a Category III wetland (Appendix B). After construction of the reservoir and associated wetland, we determine the overall wetland would have a functioning value of 73.3% and would be considered a Category II wetland (Appendix C).

Based on this analysis, we would more than double the functioning value of the wetland through construction of the reservoir and improvement of the adjacent wetlands. We believe this will more than offset the loss of 16.9 acres of wetland proposed in the development of the reservoir. The Montana Wetland Assessment will be conducted after the construction of the reservoir to evaluate the actual improvement in wetland condition.

### Maintenance

The Deyo Reservoir/wetland project area will be owned and managed by IDFG. It is the Department's mission to preserve, protect, perpetuate and manage all wildlife in the state of Idaho. As such, the Department will make efforts to maintain all habitats within its property in a manner to meet this mission. This will include controlling weeds, planting desirable species (both wetland and upland species) and maintaining the structures that are developed. Funds will come from the Department's annual maintenance budget (boating/fishing dollars) as well as from periodic grants when more costly maintenance is necessary. The Department, as a landowner, is required (through Dept of Ag regulation) to control all noxious weeds on the states noxious weed list. As a result, the department will inspect this property two to three times annually for noxious weeds and control through spraying or other means.

### Monitoring/ Adaptive Management

As indicated earlier, the Department has utilized the 2008 MDT Montana Wetland Assessment Methodology to evaluate the current conditions (pre dam construction) of the wetland at the Deyo Reservoir project site. The Department will utilize this assessment methodology after the reservoir is constructed to continue evaluating the actual functioning condition of the wetland. These surveys will continue annually after the reservoir and wetland has been developed for a period of five years and every 3 to 5 years after. To assist with the Montana Wetland Assessment, the Department will conduct surveys of vegetation (dominate types and wetland surface area), waterfowl, herps, non-game birds, and other species indicated on IDFG's comprehensive wildlife conservation strategy list. Reports of these surveys and the Montana Wetland Assessment will be provided to the Corps of Engineers. The Department will use the Montana Wetland Assessment to determine the condition of wetland and help determine if maintenance or improvements are needed. If the Montana Wetland Assessment shows that the wetland functioning value has dropped below 63.0% (see *Trigger for Adaptive Management* below on how and why we came up with this value), the Department will make additional efforts to improve conditions of the wetland. This may include dredging of the ponds, planting; weed control, wood placement, etc. Funding will come from the Department's annual maintenance budget and/or grants. It should be noted that it is not the Department's intent to allow continual degradation of the wetland areas until it drops below a 63% functioning value. Noxious weed control will be ongoing and other improvements to benefit wetland plants and animals will be evaluated and conducted on an annual basis. To insure that the monitoring and other obligations associated with this mitigation plan are not lost/forgotten in the future, IDFG will publish this in an annual report. This report will be provided to the Corp of Engineers.

#### *Trigger for Adaptive Management*

We came up with a trigger to conduct mandatory wetland improvement work based on the following rational. The goal of the wetland mitigation is to provide a wetland that is of equal or greater value after the reservoir is constructed compared to what currently exists. The benefit the current wetland provides was calculated by multiplying the number of acres of wetland (38.3 acres) by its functioning value (36.0%) as determined by the Montana Wetland Assessment.

$$38.3 \text{ acres} \times 36.0 \text{ functioning value} = 1,378.8 \text{ units of benefit}$$

To determine what the functioning value would have to be in the proposed wetland to provide an equal benefit we divided 1,378.8 units of benefit by the number of acres the proposed wetland would cover (21.9 acres).

$$1,378.8 \text{ units of benefit} / 21.9 \text{ acres} = 63.0 \text{ functioning value.}$$

Using this strategy, IDFG would not allow the proposed wetland to provide less benefit than the current wetland provides.

### **Downstream Impacts**

The IDFG recognizes that the construction of Deyo Reservoir will influence flows and water temperatures downstream in Schmidt Creek. Potential influences include taking the peak of spring flow as the reservoir annually fills (it is anticipated the reservoir will drop 1.5 ft every summer) and as seep around the reservoir increases summer low flow. Currently, Schmidt Creek at the project site does not flow on the surface from about mid-June to November. The IDFG has begun monitoring water temperatures (thermographs) and flows in lower Schmidt Creek where juvenile steelhead have been documented in the past. This monitoring will occur two years prior to the filling of the reservoir and will continue for two years after the reservoir has filled. Comparisons will be made pre and post reservoir construction to determine if changes in releases from the reservoir are necessary to protect steelhead downstream (as related to flows and temperature).

### **Sedimentation**

The lifespan of wetlands, ponds lakes and reservoirs alike all have life spans dependent on the rate of natural sedimentation. It is in the IDFG's best interest to protect its investment in Deyo Reservoir, if constructed, by prolonging its life span. To help accomplish this, the IDFG designed a wetland upstream of the reservoir where it will intercept incoming sediment. All flows from Schmidt Creek must flow through a series of three ponds allowing most sediment to settle out before it reaches the reservoir. As these wetland ponds fill in, the IDFG can increase their capacity through periodic dredging. Grants are available to the IDFG to take on tasks such as this.



Figure 1. The wetland boundary determined on January 11, 2010 within the Deyo Reservoir project area, Idaho.

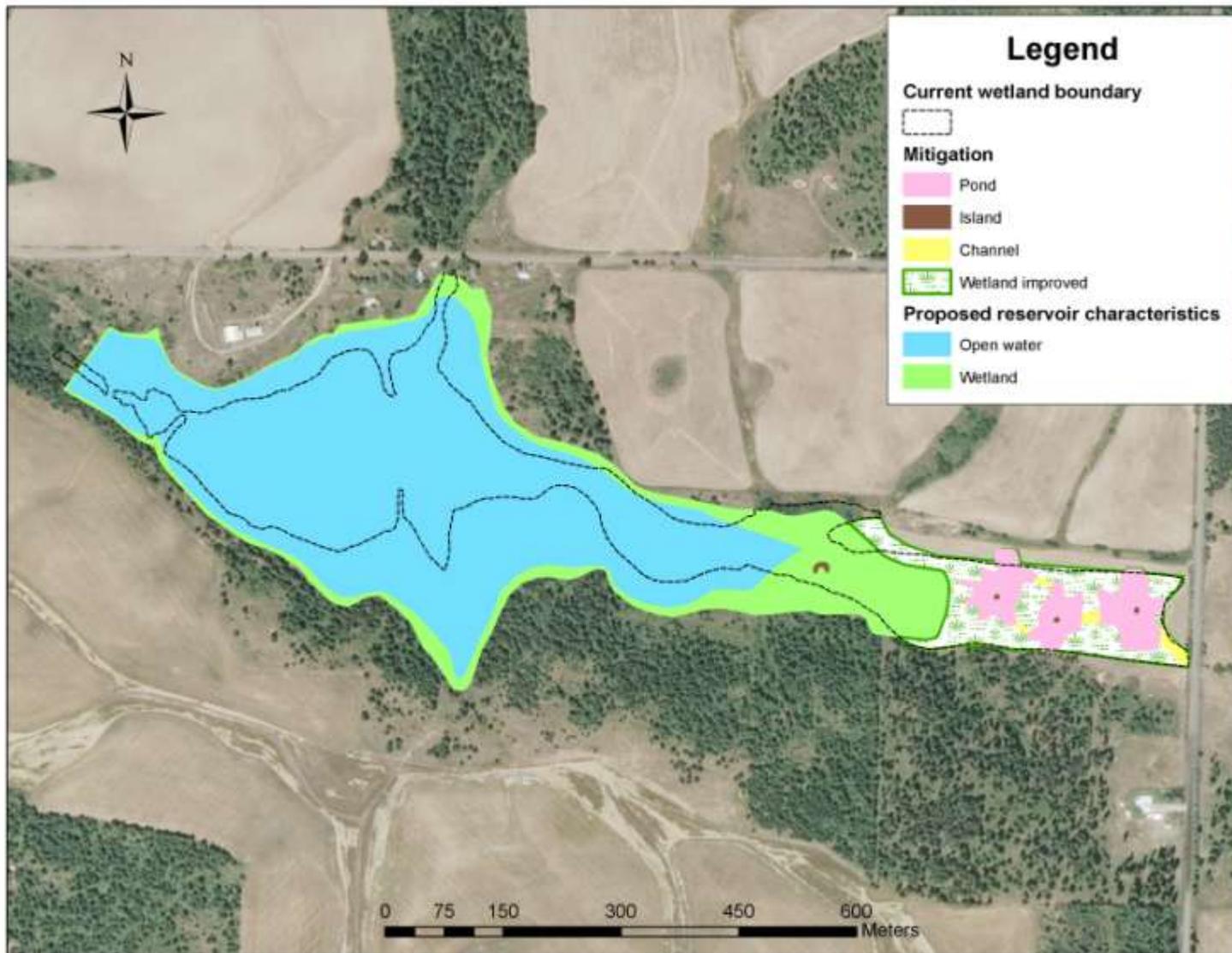


Figure 2. Proposed wetland areas within the Deyo Reservoir high water mark (open water > 3 ft deep; wetland < 3 ft deep) and wetland habitat that will be improved through mitigation in relation to the current wetland boundary.

Appendix A. Contract specification for enhancement of wetlands in the Deyo Reservoir project area.

### **Deyo Reservoir Wetland Contract**

It should be noted that the actual location of the ponds, ditches and islands may differ some from the attached diagram. The actual locations will be staked out on the ground. Calculated fill and excavation volumes are expected to be within 10% of the actual volumes.

#### **Three ponds**

- Ponds 1 will have a maximum depth of 5 ft in the middle of the pond of the pond. Banks will have a slope of 1:8.
- Pond 2 will have a maximum depth of 4 ft. Banks will have side slopes of 1:15.
- Pond 3 will have a maximum depth of 4 ft. Banks will have a side slope of 1:15

Islands will maintained (if constructed they must be compacted with 1 ft lifts) near the center of each pond with a 1:3 side slope. The surface of the top of the islands should cover an area of about 400 ft<sup>2</sup> and should extend to the level of the surrounding unexcavated land.

The total area to be excavated is estimated to be 16,000 cubic yards.

#### **Stream Channel**

- **Channel 1** will be about 170 ft long, will have a maximum depth of 2 ft, and will be 50 ft wide. This depth will be carried for the entire length of the channel. The banks of the channel will have a side slope of 1:8. The south bank from starting at the road for a distance of 75 ft will be armored with rip-rap (24 inch minus) and underlain with non-woven filter fabric.
- **Channel 2** will be about 100 ft long and will have a maximum depth of 1 ft and will be 50 feet wide with a 1:15 side slope.
- **Channel 3 and 4** will each be about 100 ft long and will have a depth of 0.5 ft that will be maintained between the ponds. Each channel will be 25 ft wide with a 1:10 side slope.

The total area to be excavated is estimated to be about 800 cubic yards.

#### **Fill**

Soil excavated from each of the ponds and channels will be used to fill the two ditches and parking lot identified on the figure below. Fill placed in these ditches and the parking lot will be compacted with 1 ft lifts.

- **North ditch** - The fill in the northern ditch will be sloped to blend between the upper field and the lower field.
- **South ditch** – Fill in the southern ditch, when complete, must be elevated 6 inches above the field to the north except for the fill from the road for 250 ft to the west. In this area the fill must be elevated 1 ft above the field to the north.
- **Parking lot** – The approximate size of the Parking lot will be 150 ft x 60 ft. Fill for the parking lot must be raised so that it's surface matches the county road. Thickness of Pitrun Gravel shall be 1 ft after compaction. Thickness of Type A2 gravel shall be 0.35 ft. after compaction. Pitrun material shall be per Section 801 of the ISPWC for 6" Nominal Maximum Size. Crushed Aggregate Base material shall be Aggregate Type A2 per Section 02207. After completion, the parking lot will slope away from county road at a 2-4% grade.

The volume of fill required for the ditches and parking lot is estimated to be about 8,000 cubic yards. All remaining fill can be spread across the narrow field to the north and sloped to blend into the crop fields to the north. The fill must be placed in a manner to allow drainage from the crop fields to enter the wetland area below.

### **Large Island in Reservoir Proper**

The location of this island will be staked out (stakes will indicate where the top of the island will be). When the reservoir is full, this island will be in about 4 ft of water and 2 ft of the island will extend above the water line. As such, the island will be built 6 ft tall with 1:3 side slopes. The top of the island (the top 2 ft of that will extend above the water) should cover a surface area of about 1,800 ft<sup>2</sup>. This island will be constructed by pushing up the surrounding soil and will be compacted after each 1 ft lift.

### **Planting**

#### *Ponds*

- All ponds from the top edge to down 1 vertical foot will be planted with big-leaf, inflated and Nebraska sedge, jointed rush at an even ratio. These rushes and sedges will be planted in 10 in<sup>2</sup> plugs at a 9" spacing. The area to be planted is about 40,500 ft<sup>2</sup>.
- All ponds between 1 and 2 vertical feet from the surface will be planted with common spike-rush and beaked and water sedge at an even ratio. These rushes and sedges will be planted in 3 in<sup>2</sup> plugs at a 9" spacing. The area to be planted is about 33,000 ft<sup>2</sup>.

#### *Islands*

- All islands inside the ponds from the top down 1 vertical foot will be planted with big-leaf, inflated and Nebraska sedge, jointed rush at an even ratio. These rushes and sedges will be planted in 3 in<sup>2</sup> plugs at a 9" spacing. The larger island in the reservoir proper will be planted using these same specifications for the top three vertical feet.

- All islands in the ponds between 1 and 2 vertical feet from the surface will be planted with common spike-rush and beaked and water sedge at an even ratio. These rushes and sedges will be planted in 10 in<sup>2</sup> plugs at a 9" spacing. The larger island in the reservoir will be planted using these same specifications between 3 and 4 vertical feet from the surface.

#### *Channels*

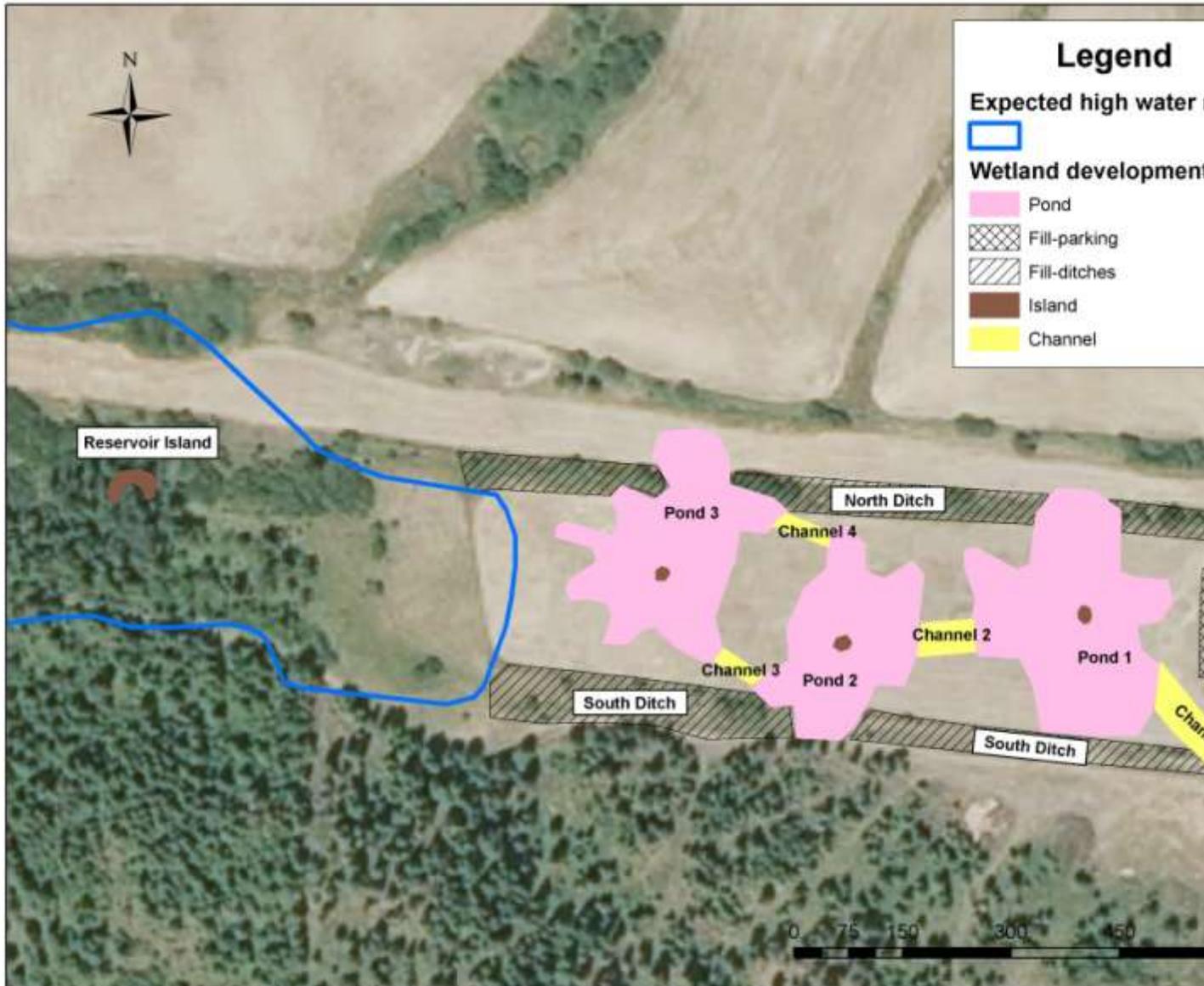
- All excavated channels will be planted with common spike-rush and beaked and water sedge at an even ratio. These rushes and sedges will be planted in 3 in<sup>2</sup> plugs at a 9" spacing. About 18,500 ft<sup>2</sup> will need to be planted.
- Red-osier dogwood, Booth, and Geyer willow species will also be planted along the top 5 ft of each bank. The dogwoods and willows will be planted as poles in bundles of 6 with each bundle having an even mixture of each species. These bundles will be harvested from a nearby source (similar elevation) in the fall after they have gone dormant. These bundles will be planted at a 10 ft spacing along both banks.

#### *Filled ditches*

- All filled ditches will be seeded with a native grass mixture the same as will occur in the reclaimed borrow areas.
- Red-osier dogwood and Booth and Geyer willow species will also be planted along the edge of these ditches (the side that borders the developed wetland). The dogwoods and willows will be planted as poles in bundles of 6 with each bundle having an even mixture of each species. These bundles will be harvested from a nearby source (similar elevation) in the fall after they have gone dormant. These bundles will be planted at a 10 ft spacing.

#### *Fill in upper field and other disturbed areas*

- All other bare areas will be seeded with a native grass mixture the same as will occur in the reclaimed borrow areas.



Appendix B Assessment of the current wetland conditions on the IDFG, Deyo Reservoir property using the 2008 MDT Montana Wetland Assessment methodology.

# **Appendix A**

## **2008 MDT Montana Wetland Assessment Method Form**

### MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Dryo Wetlands 2. MDT Project #: \_\_\_\_\_ Control #: \_\_\_\_\_  
 3. Evaluation Date: Mo. 5 Day 12 Yr. 10 4. Evaluator(s): J. Barrell/T. Schmidt 5. Wetlands/Site #(s): Dryo Mitigation Wetlands  
 6. Wetland Location(s): I. Legal: T 35 or S; R 4 or W; S \_\_\_\_\_; T \_\_\_\_\_ N or S; R \_\_\_\_\_ E or W; S \_\_\_\_\_;  
 II. Approx. Stationing or Mileposts: \_\_\_\_\_  
 III. Watershed: \_\_\_\_\_ Watershed Name, County: Schmidt Creek, Clearwater County

7. a. Evaluating Agency: DDFG;  
 b. Purpose of Evaluation:  
 1.  Wetlands potentially affected by MDT project  
 2.  Mitigation wetlands; pre-construction  
 3.  Mitigation wetlands; post-construction  
 4.  Other \_\_\_\_\_  
 8. Wetland size: (total acres) \_\_\_\_\_ (visually estimated)  
38.3 (measured, e.g. by GPS [if applies])  
 9. Assessment area (AA): (acres, see instructions on determining AA) \_\_\_\_\_ (visually estimated)  
38.3 (measured, e.g. by GPS [if applies])

**10. Classification of Wetland and Aquatic Habitats in AA**

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
<u>R</u>	<u>EM</u>	<u>E</u>	<u>SI</u>	
	<u>SS</u>	<u>I</u>		
		<u>D</u>		
		<u>PD</u>		

Abbreviations: (see manual for definitions)  
**HGM Classes:** Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF);  
**Cowardin Classes:** Rock Bottom (RB), Unconsolidated bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)  
**Modifiers:** Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)  
**Water Regimes:** Permanent / Perennial (PP), Seasonal / Intermittent (SI), Temporary / Ephemeral (TE)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)  
 (Circle one) Unknown Rare Common Abundant

**12. General condition of AA:**

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

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

Comments: (types of disturbance, intensity, season, etc.):  
Man-made impoundment, grazing in and around A.A. Logging has occurred in and around A.A.  
 II. Prominent noxious, aquatic nuisance, & other exotic vegetation species:  
Reed canarygrass is a dominant understory species.  
 III. Provide brief descriptive summary of AA and surrounding land use/habitat:

**13. Structural Diversity:** (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management preventing (passive) existence of additional vegetated classes?		Modified Rating
≥3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	<u>M</u>	NA	NA	NA
1 class, but not a monoculture	M	←NO	YES→	L
1 class, monoculture (1 species comprises ≥90% of total cover)	L	NA	NA	NA

Comments:

**SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT**

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

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

- Primary or critical habitat (list species) D S
- Secondary habitat (list species) D S
- Incidental habitat (list species) D S
- No usable habitat S

Steelhead, Sockeye Salmon, Chinook Salmon, Canada Lynx

II. **Rating** (use the conclusions from I above and the matrix below to arrive at [circle] the functional points and rating)

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

Sources for documented use (e.g. observations, records, etc.):

**14B. Habitat for plant or animals rated S1, S2, or S3 by the <sup>Idaho</sup> Montana Natural Heritage Program:** (not including species listed in 14A above)

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

- Primary or critical habitat (list species) D S
- Secondary habitat (list species) D S
- Incidental habitat (list species) D S
- No usable habitat S

See attached

II. **Rating** (use the conclusions from I above and the matrix below to arrive at [circle] the functional points and rating)

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

Sources for documented use (e.g. observations, records, etc.):

**14C. General Wildlife Habitat Rating:**

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

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

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

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

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

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

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

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

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

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

Comments:

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

**Type of Fishery:** Cold Water (CW) NA Warm Water (WW) NA Use the CW or WW guidelines in the user manual to complete the matrix  
*Not a sustainable fishery now*

**I. Habitat Quality and Known / Suspected Fish Species in AA** (use matrix to arrive at [circle] the functional points and rating)

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

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

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? **Y** **N** If yes, reduce score in I above by 0.1: = 0.1L

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

iii. Final Score and Rating: 0.1 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 14F.)

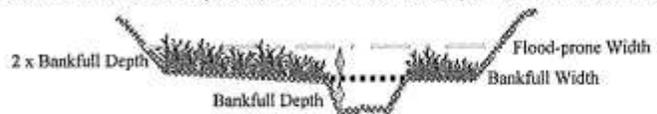
**I. Rating** (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched - B stream type			Entrenched - A, F, G stream types		
	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	<b>.5M</b>	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation - see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width)

Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

$$\frac{20' \text{ Flood-prone width}}{13.5' \text{ Bankfull width}} = 5.71 \text{ Entrenchment ratio (ER)}$$



Slightly Entrenched ER = >2.2			Moderately Entrenched ER = 1.41 - 2.2		Entrenched ER = 1.0 - 1.4	
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (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 to 14G.)

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

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

Comments: \_\_\_\_\_

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, circle **NA** here and proceed to 14H.)

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])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
	≥ 70%				< 70%			
% cover of wetland vegetation in AA	Yes		No		Yes		No	
Evidence of flooding / ponding in AA	.1H		.6H		.7M		.5M	
AA contains no or restricted outlet	.9H		.7M		.6M		.4M	
AA contains unrestricted outlet	.3L		.4M		.3L		.2L	

Comments: Wetland vegetation is dominated by understory of Reed canarygrass.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, circle **NA** here and proceed to 14I.)

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

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

Comments:

14I. Production Export/Food Chain Support:

I. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

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

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

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

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

a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? **Y** N If yes, add 0.1 to the score in II above and adjust rating accordingly: 0.6M

IV. Final Score and Rating: 0.6M Comments:

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in I & II below) N/A because of insufficient data/information

I. Discharge Indicators

- The AA is a slope wetland
- Springs or seeps are known or observed
- Vegetation growing during dormant season/drought
- Wetland occurs at the toe of a natural slope
- Seeps are present at the wetland edge
- AA permanently flooded during drought periods
- Wetland contains an outlet, but no inlet
- Shallow water table and the site is saturated to the surface
- Other: \_\_\_\_\_

II. Recharge Indicators

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



FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): 36% Category III Wetland

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	Low	0.1	1	3.83	
B. MT Natural Heritage Program Species Habitat	Low	0.1	1	3.83	
C. General Wildlife Habitat	Low	0.3	1	11.49	
D. General Fish Habitat	Low	0.1	1	3.83	
E. Flood Attenuation	Moderate	0.5	1	19.15	
F. Short and Long Term Surface Water Storage	Moderate	0.5	1	19.15	
G. Sediment/Nutrient/Toxicant Removal	High	1.0	1	38.3	
H. Sediment/Shoreline Stabilization	Moderate	0.2	1	7.66	
I. Production Export/Food Chain Support	Moderate	0.6	1	22.98	
J. Groundwater Discharge/Recharge	N/A	N/A	-	-	
K. Uniqueness	Low	0.2	1	7.66	
L. Recreation/Education Potential (bonus points)	N/A	N/A	NA	-	
Totals:		3.6	10	206.82	
Percent of Possible Score			36 %		

**Category I Wetland:** (must satisfy **one** of the following criteria; otherwise go to Category II)

- \_\_\_ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; or
- \_\_\_ Score of 1 functional point for Uniqueness; or
- \_\_\_ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; or
- \_\_\_ Percent of possible score > 80% (round to nearest whole #).

**Category II Wetland:** (Criteria for Category I not satisfied and meets any **one** of the following criteria; otherwise go to Category IV)

- \_\_\_ Score of 1 functional point for MT Natural Heritage Program Species Habitat; or
- \_\_\_ Score of .9 or 1 functional point for General Wildlife Habitat; or
- \_\_\_ Score of .9 or 1 functional point for General Fish Habitat; or
- \_\_\_ "High" to "Exceptional" ratings for **both** General Wildlife Habitat and General Fish/Aquatic Habitat; or
- \_\_\_ Score of .9 functional point for Uniqueness; or
- \_\_\_ Percent of possible score > 65% (round to nearest whole #).

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

**Category IV Wetland:** (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

- \_\_\_ "Low" rating for Uniqueness; and
- \_\_\_ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); and
- \_\_\_ Percent of possible score < 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: (circle appropriate category based on the criteria outlined above) I II **III** IV

Appendix C. Assessment of the wetlands, on the IDFG, Deyo Reservoir property, that are expected to be developed following construction of Deyo Reservoir (including the associated wetland mitigation) using the 2008 MDT Montana Wetland Assessment methodology.

## **Appendix A**

### **2008 MDT Montana Wetland Assessment Method Form**

## MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Deer Wetlands 2. MDT Project #: \_\_\_\_\_ Control #: \_\_\_\_\_  
 3. Evaluation Date: Mo. 5 Day 12 Yr. 2010 4. Evaluator(s): J. Barrett/T. Ulschmidt 5. Wetlands/Site #(s): Deer Mitigation Wetlands  
 6. Wetland Location(s): i. Legal: T 35 (N) or S; R 4 (E) or W; S \_\_\_\_\_; T \_\_\_\_\_ N or S; R \_\_\_\_\_ E or W; S \_\_\_\_\_;  
 ii. Approx. Stationing or Mileposts: \_\_\_\_\_  
 iii. Watershed: \_\_\_\_\_ Watershed Name, County: Schmidt Creek, Clearwater County

7. a. Evaluating Agency: IDFG 8. Wetland size: (total acres) \_\_\_\_\_ (visually estimated)  
 b. Purpose of Evaluation: 20.3 (measured, e.g. by GPS [if applies])  
 1. \_\_\_\_\_ Wetlands potentially affected by MDT project  
 2. \_\_\_\_\_ Mitigation wetlands; pre-construction  
 3. \_\_\_\_\_ Mitigation wetlands; post-construction  
 4. \_\_\_\_\_ Other \_\_\_\_\_  
 9. Assessment area (AA): (acres, \_\_\_\_\_ (visually estimated)  
 see instructions on determining AA) 20.3 (measured, e.g. by GPS [if applies])

### 10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
<u>R</u>	<u>EM</u>	<u>E</u>	<u>SI</u>	<u>60%</u>
	<u>SS</u>	<u>I</u>		
	<u>FO</u>	<u>D</u>		
		<u>A</u>		

Abbreviations: (see manual for definitions)

**HGM Classes:** Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF);

**Cowardin Classes:** Rock Bottom (RB), Unconsolidated bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)

**Modifiers:** Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)

**Water Regimes:** Permanent / Perennial (PP), Seasonal / Intermittent (SI), Temporary / Ephemeral (TE)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)  
 (Circle one) Unknown Rare Common Abundant

### 12. General condition of AA:

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

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

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

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

Reed's canarygrass

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

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management preventing (passive) existence of additional vegetated classes?		Modified Rating
≥3 (or 2 if 1 is forested) classes	<u>H</u>	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	M	++NO	YES→	L
1 class, monoculture (1 species comprises ≥90% of total cover)	L	NA	NA	NA

Comments:

**SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT**

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

- i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):
- Primary or critical habitat (list species)     D S \_\_\_\_\_  
 Secondary habitat (list species)             D S \_\_\_\_\_  
 Incidental habitat (list species)             D (S) Steelhead, Chinook, Canada Lynx  
 No usable habitat                                 S \_\_\_\_\_

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

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

Sources for documented use (e.g. observations, records, etc):

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

- i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):
- Primary or critical habitat (list species)     D (S) Pygmy Nuthatch  
 Secondary habitat (list species)             D (S) Mountain Quail  
 Incidental habitat (list species)             D (S) Canada Lynx, Fisher     see attached  
 No usable habitat                                 S \_\_\_\_\_

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

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

Sources for documented use (e.g. observations, records, etc.):

**14C. General Wildlife Habitat Rating:**

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

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

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

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

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

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

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

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

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

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

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

Comments:

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

**Type of Fishery:** Cold Water (CW)  Warm Water (WW)  Use the CW or WW guidelines in the user manual to complete the matrix

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

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

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

**ii. Modified Rating** (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? **Y/N** If yes, reduce score in I above by 0.1: 0.3M

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

**iii. Final Score and Rating:** 0.3 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 14F.)

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

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

**Entrenchment ratio (ER) estimation** - see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width)  
Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

$$ER = \frac{N}{A}$$

Flood-prone width = N  
Bankfull width = A



Slightly Entrenched ER = >2.2			Moderately Entrenched ER = 1.41 - 2.2	Entrenched ER = 1.0 - 1.4		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type

**ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (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 to 14G.)

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

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

Comments:

**14G. Sediment/Nutrient/Toxicant Retention and Removal:** (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, circle **NA** here and proceed to 14H.)

**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])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
	≥ 70%		< 70%		≥ 70%		< 70%	
% cover of wetland vegetation in AA	Yes	No	Yes	No	Yes	No	Yes	No
Evidence of flooding / ponding in AA	(1H)	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains no or restricted outlet								
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments:

**14H Sediment/Shoreline Stabilization:** (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, circle **NA** here and proceed to 14I.)

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

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

Comments:

**14I. Production Export/Food Chain Support:**

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

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

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

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

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

a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference?  **Y** **N** If yes, add 0.1 to the score in ii above and adjust rating accordingly: 0.8

iv. Final Score and Rating: 0.8 Comments:

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

**i. Discharge Indicators**

- The AA is a slope wetland
- Springs or seeps are known or observed
- Vegetation growing during dormant season/drought
- Wetland occurs at the toe of a natural slope
- Seeps are present at the wetland edge
- AA permanently flooded during drought periods
- Wetland contains an outlet, but no inlet
- Shallow water table and the site is saturated to the surface
- Other: \_\_\_\_\_

**ii. Recharge Indicators**

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



FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): 73.3% Category II Wetland

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.1	1	2.03	
B. MT Natural Heritage Program Species Habitat	H	0.8	1	16.24	
C. General Wildlife Habitat	H	0.9	1	18.27	
D. General Fish Habitat	M	0.3	1	6.09	
E. Flood Attenuation	M	N/A	N/A	N/A	
F. Short and Long Term Surface Water Storage	H	0.9	1	18.27	
G. Sediment/Nutrient/Toxicant Removal	H	1.0	1	20.3	
H. Sediment/Shoreline Stabilization	H	0.9	1	18.27	
I. Production Export/Food Chain Support	M	0.8	1	16.24	
J. Groundwater Discharge/Recharge	N/A	N/A	N/A	N/A	
K. Uniqueness	M	0.7	1	14.21	
L. Recreation/Education Potential (bonus points)	H	0.2	NA	4.06	
Totals:		6.6	9	130.98	
Percent of Possible Score			73.3 %		

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

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

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

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

OVERALL ANALYSIS AREA RATING: (circle appropriate category based on the criteria outlined above) I (II) III IV

T&E species documented from the Idaho Conservation Data Center database within a 10 mile radius

Common	Scientific Name	SURVETM	DTA TYPE	Month	Day	Year	X (decimal)	Y (decimal)	G-rank	S-rank
Mountain Quail	Oreortyx pictus	Incidental Observation	Observed (seen)	5	28	2005	-115.969616	46.340907	G5	S1
Gillette's Checkerspot	Euphydryas gillettei	Incidental Observation	Specimen	4	28	1991	-116.146523	46.324547	G7G3	S3
Lynx	Lynx canadensis	Incidental Observation	Specimen	0	0	1910	-116.131722	46.301438	G5	S1
Bald Eagle	Haliaeetus leucocephalus	Bald Eagle Nest Monitoring	Nest, den, or burrow observed	0	0	2008	-116.124247	46.292214	G4	S3B
North American Wolverine	Gulo gulo lutosus	Incidental Observation	Observed (seen)	4	23	1989	-115.97818	46.290598	G4F4	S2
Fisher	Marxus pennanti	Incidental Observation	Observed (seen)	11	20	1993	-115.899442	46.373888	G5	S1

	Scientific Name	Common Name	ESA list	G Rank	S Rank	potential	document/suspected
Lampreys	<i>Lampetra tridentata</i>	Pacific Lamprey		G5	S1	no	S
Fishes	<i>Oncorhynchus mykiss gairdneri</i>	Steelhead	T	G5T2T3	S3	no	S
	<i>Oncorhynchus nerka</i>	Sockeye Salmon	E	G5T1	S1	no	S
	<i>Oncorhynchus tshawytscha</i>	Chinook Salmon	T	G5T1	S1	no	S
	<i>Oncorhynchus mykiss gairdneri</i>	Inland Redband Trout		G5T4	S4	no	S
Amphibians	<i>Dicamptodon aterrimus</i>	Idaho Giant Salamander		G3	S3	yes	S
Reptiles	<i>Diadophis punctatus</i>	Ring-necked Snake		G5	S2	yes	S
	<i>Elgaria coerulea</i>	Northern Alligator Lizard		G5	S2	yes	S
Birds	<i>Anas acuta</i>	Northern Pintail		G5	S2N	yes	S
	<i>Aythya affinis</i>	Lesser Scaup		G5	S3	yes	S
	<i>Oreortyx pictus</i>	Mountain Quail		G5	S1B	yes	D
	<i>Buteo swainsoni</i>	Swainson's Hawk		G5	S3B	yes	S
	<i>Falco columbarius</i>	Merlin		G5	S2B S2N	yes	S
	<i>Falco peregrinus anatum</i>	Peregrine Falcon		G4T3	S2B	yes	S
	<i>Haliaeetus leucocephalus</i>	Bald Eagle		G4	S3B	yes	D
	<i>Bartramia longicauda</i>	Upland Sandpiper		G5		yes	S
	<i>Numenius americanus</i>	Long-billed Curlew		G5	S2B	yes	S
	<i>Phalaropus tricolor</i>	Wilson's Phalarope		G5	S3B	yes	S
	<i>Coccyzus americanus</i>	Yellow-billed Cuckoo		G5	S2B	yes	S
	<i>Aegolius funereus</i>	Boreal Owl		G5	S2	yes	S
	<i>Otus flammeolus</i>	Flammulated Owl		G4	S3B	yes	S
	<i>Melanerpes lewis</i>	Lewis's Woodpecker		G4	S3B	yes	S
	<i>Picoides albolarvatus</i>	White-headed Woodpecker		G4	S2	yes	S
	<i>Picoides dorsalis</i>	American Three-toed Woodpecker		G5	S2	yes	S
	<i>Cypseloides niger</i>	Black Swift		G4	S1	yes	S
<i>Ammodramus savannarum</i>	Grasshopper Sparrow		G5	S2	yes	S	
<i>Sitta pygmaea</i>	Pygmy Nuthatch		G5	S1	yes	S	
Mammals	<i>Sorex hoyi</i>	Pygmy Shrew		G5	S1	yes	S
	<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat		G4	S3	yes	S
	<i>Myotis californicus</i>	California Myotis		G5	S2	yes	S
	<i>Myotis thysanodes</i>	Fringed Myotis		G4G5	S2	yes	S

	<i>Neotamias ruficaudus</i>	Red-tailed Chipmunk		G5	S3	yes	S
	<i>Canis lupus</i>	Gray Wolf		G4	S3	yes	S
	<i>Gulo gulo</i>	Wolverine		G4T4	S2	yes	D
	<i>Lynx canadensis</i>	Canada Lynx	T	G5	S1	yes	D
	<i>Martes pennanti</i>	Fisher		G5	S1	yes	D
Bivalves	<i>Goridea angulata</i>	Western Ridged Mussel		G3	S2		S
Gastropods	<i>Hemphilia carmelus</i>	Pale Jumping-slug		G3G4	S2	yes	S
	<i>Margaritana falcata</i>	Western Pearshell		G2G3	S2	yes	S
	<i>Polygyrella polygyrella</i>	Humped Coin		G2	S1	yes	S
	<i>Prisilonna idahoense</i>	Thinlip Tightcoil		G1G2	S2	yes	S
	<i>Prophysaon humile</i>	Smoky Tairdropper		G3	S2	yes	S
	<i>Radiodiscus abietum</i>	Fir Pirwhael		G2	S1	yes	S
	<i>Udosarx lyrata</i>	Lyre Mantleslug		G3G4	S2	yes	S
	<i>Zacoleus idahoensis</i>	Sheathed Slug		G2G3	S3	yes	D
Insects	<i>Euphydryas gillettii</i>	Gillette's Checkerspot		G2G3	S2	yes	S
	<i>Melanoplus digittifer</i>	A Spur-throat Grasshopper		G2G3	S2	yes	S

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