



Montana Fish, Wildlife & Parks

1400 South 19th Ave
Bozeman, MT 59718
February 18, 2010

To: Beaverhead County Commissioners
Governor's Office, Mike Volesky, State Capitol, Room 204, PO Box 200801, Helena, MT 59620-0801
Environmental Quality Council, State Capitol, Room 106, PO Box 201704, Helena, MT 59620-1704
Dept. of Environmental Quality, Metcalf Building, PO Box 200901, Helena, MT 59620-0901
Dept. of Natural Resources & Conservation, PO Box 201601, Helena, MT 59620-1601

Montana Fish, Wildlife & Parks:

Director's Office	Parks Division	Lands Section	FWP Commissioners
Fisheries Division	Legal Unit	Wildlife Division	Design & Construction

MT Historical Society, State Historic Preservation Office, PO Box 201202, Helena, MT 59620-1202
MT State Parks Association, PO Box 699, Billings, MT 59103
MT State Library, 1515 E. Sixth Ave., PO Box 201800, Helena, MT 59620
James Jensen, Montana Environmental Information Center, PO Box 1184, Helena, MT 59624
Janet Ellis, Montana Audubon Council, PO Box 595, Helena, MT 59624
George Ochenski, PO Box 689, Helena, MT 59624
Bar Seven Ranch, PO Box 320062, Glen MT 597320062
Smith 6 Bar S Livestock, PO Box 320007, Glen MT 597320007
Nelson Genevieve, PO Box 601, Butte MT 59703-0601
Rowe James, 119072 Juniper Acres Rd, Butte MT 59750-9705
Kilwein Property LLC MT LLC, PO Box 655, Lake Forest IL 60045-0655
The Gainey Foundation, 6000 Clay Ave SW, Grand Rapids MI 49548-5785
Rathie Monty R, PO Box 320042, Glen MT 59732-0042

Ladies and Gentlemen:

The enclosed Environmental Assessment (EA) has been prepared for an existing Fishing Access Site (FAS) on the Big Hole River. Montana Fish, Wildlife & Parks (FWP) proposes to implement several site improvements to Glen Fishing Access Site (FAS) including building a single-wide concrete boat ramp with a cul-de-sac and improving parking areas. If funds are available, FWP also proposes to improve existing campsites as well as develop new campsites.

Montana Fish, Wildlife & Parks invites you to comment on the attached proposal. If requested, FWP will schedule and conduct a public meeting on this proposed project. Public comment will be accepted until 5:00 p.m. on March 22, 2009. Comments should be sent to the following:

Glen FAS EA
Montana Fish, Wildlife & Parks
1400 South 19th Avenue
Bozeman MT 59718-5496

Or emailed to: tgarett@mt.gov.

Sincerely,

Gerald Walker, Region Three Parks Manager

DRAFT ENVIRONMENTAL ASSESSMENT

GLEN FISHING ACCESS SITE PROPOSED IMPROVEMENTS PROJECT



February 2010



***Montana Fish,
Wildlife & Parks***

**Glen Fishing Access Site
Proposed Improvements Project
Draft Environmental Assessment
MEPA, NEPA, MCA 23-1-110 CHECKLIST**

PART I. PROPOSED ACTION DESCRIPTION

1. Type of proposed state action:

The installation of a new concrete bridge on Burma Road over the Big Hole River has made the existing boat ramp location at Glen Fishing Access Site (FAS) difficult to access and maintain. The purpose of this project is to relocate the boat ramp to a point further downstream for easier access, to mitigate erosion, and to better define roads and parking. The new boat ramp will be single-wide concrete with a gravel cul-de-sac. One new campsite will be developed at the existing boat ramp access road and 5 new campsites at other locations within the FAS. New prefabricated fire rings and picnic tables will be placed at existing primitive campsites. Barrier rocks will be placed to delineate roadways and parking.

2. Agency authority for the proposed action:

The 1977 Montana Legislature enacted statute 87-1-605, which directs Montana Fish Wildlife and Parks (FWP) to acquire, develop, and operate a system of fishing accesses. The legislature earmarked a funding account to ensure that the fishing access site program would be implemented. Sections 23-1-105, 23-1-106, 15-1-122, 61-3-321, and 87-1-303, MCA, authorize the collection fees and charges for the use of state park system units and fishing access sites, and contain rule-making authority for their use, occupancy, and protection. Furthermore, state statute 23-1-110 MCA and ARM 12.2.433 guides public involvement and comment for the improvements at state parks and fishing access sites, which this document provides.

ARM 12.8.602 requires the Department to consider the wishes of users and the public, the capacity of the site for development, environmental impacts, long-range maintenance, protection of natural features and impacts on tourism as these elements relate to development or improvement to fishing access sites or state parks. This document will illuminate the facets of the proposed project in relation to this rule. See Appendix A for HB 495 qualification.

3. Name of project:

Glen Fishing Access Site Proposed Improvements Project

4. Project sponsor:

Montana Fish, Wildlife and Parks, Region 3
1400 South 19th Avenue
Bozeman, MT 59718
406-994-4042

5. Anticipated Schedule:

Estimated Construction Commencement Date: Late summer 2010
Estimated Completion Date: Fall 2010
Current Status of Project Design (% complete): 35%

6. Location:

Glen FAS is located on the Big Hole River 25 miles from the mouth on the right hand side as you face down stream, in the SW1/4 Section 24 Township 4S Range 9W. Glen FAS is located between Kalsta Bridge FAS (5 miles upstream) and Notch Bottom FAS (7 miles downstream). It is located in Beaverhead County, about 19 miles north of Dillon, Montana, and 6 miles off Interstate 15.

Figure 1. Glen Fishing Access Site Location

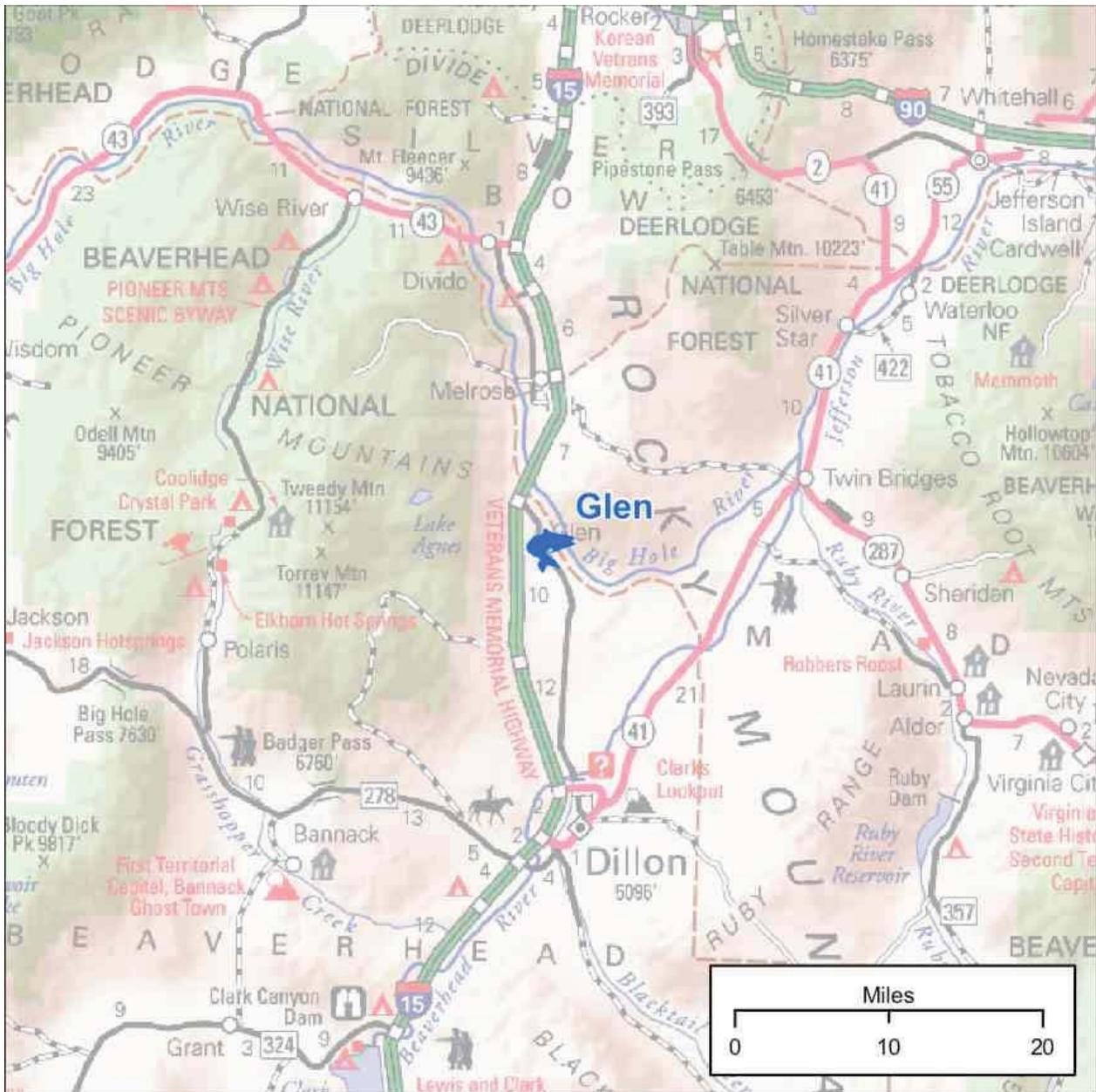


Figure 2. Glen Fishing Access Site Parcel Map.

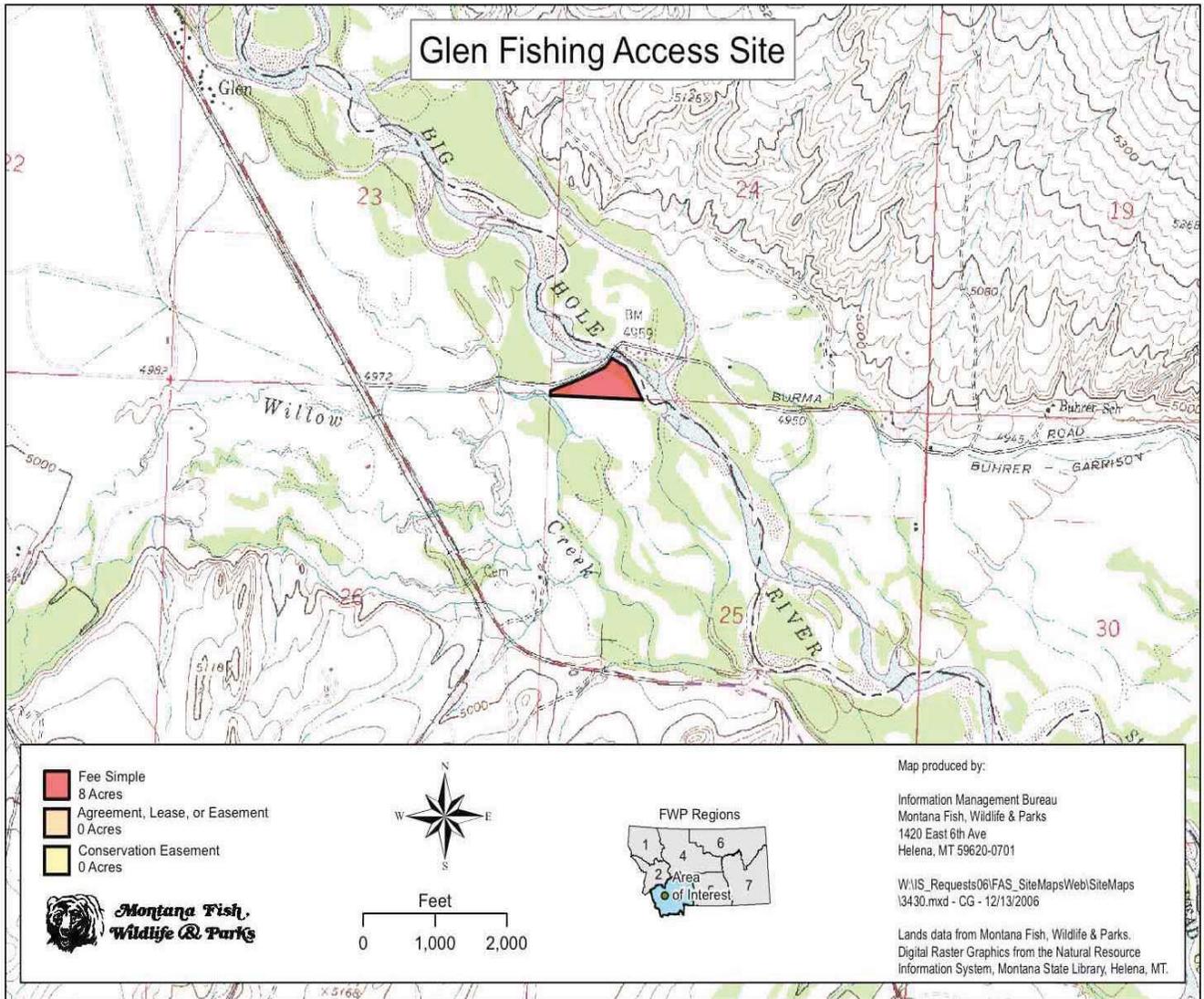


Figure 3. Aerial View of Glen FAS



7. Project size:

	<u>Acres</u>		<u>Acres</u>
(a) Developed:		(d) Floodplain	<u>1.5</u>
Residential	<u>0</u>		
Industrial	<u>0</u>	(e) Productive:	
(b) Open Space/ Woodlands/Recreation	<u>0</u>	Irrigated cropland	<u>0</u>
(c) Wetlands/Riparian Areas	<u>1.5</u>	Dry cropland	<u>0</u>
		Forestry	<u>0</u>
		Rangeland	<u>0</u>
		Other	<u>0</u>

8. Local, State or Federal agencies with overlapping or additional jurisdiction:

(a) **Permits:** Permits will be obtained prior to project start.

<u>Agency Name</u>	<u>Permits</u>
Montana Fish Wildlife & Parks	124 MT Stream Protection Act
Montana Dept. of Environmental Quality	318 Short Term Water Quality Standard for Turbidity (If required)
US Army Corps of Engineers Beaverhead County	404 Federal Clean Water Act Floodplain Permit

(b) **Funding:**

<u>Agency Name</u>	<u>Funding Amount</u>
Montana Fish Wildlife & Parks FAS Development	\$50,000

(c) **Other Overlapping or Additional Jurisdictional Responsibilities:**

<u>Agency Name</u>	<u>Type of Responsibility</u>
Natural Heritage Program	Species of Concern (Appendix B)
State Historic Preservation Office	Cultural & Historic Resources

9. Narrative summary of the proposed action:

From its modest beginnings at Skinner Lake in the Beaverhead Mountains of southwest Montana, the Big Hole River flows 153 miles to its confluence with the Beaverhead River near Twin Bridges. Early explorers and settlers were drawn to the Big Hole by the sheer size, beauty, and richness of the high elevation valley or “hole” as the trappers called it. The Big Hole River is designated as a Class I or “Blue Ribbon” fishery by FWP and is one of the most heavily used fishing streams in Montana. The river remains free flowing for its entire course, adding to its uniqueness and charm. In addition, the Upper Big Hole River contains the last stream-dwelling population of Arctic grayling in the lower 48 states.

An increasing number of anglers are discovering the fishing opportunities of the Big Hole River. Recent surveys conducted by FWP show that the Big Hole River supports over 50,000 angler days per year with an average of over 30,000 angler days per year in the stretch from the river mouth to Divide (river miles 0 – 50). Game fish opportunities in the river include Arctic grayling, brook trout, brown trout, burbot, mountain whitefish, and rainbow trout.

Glen FAS is located on a relatively stable stretch of the main channel of the Big Hole River. The FAS is covered by grassland, deciduous forest, small areas of shrubland, and wetland woody vegetation. It supports an extensive community of black cottonwood, willow, red-osier dogwood, snowberry, and reed canarygrass along the river with shrubs, dominated by willow, covering the interior portion of the FAS. Introduced grasses, primarily smooth brome, form the dominant grass cover. In addition, the FAS provides high quality riparian wildlife habitat.

Glen is one of 13 FWP managed fishing access sites on the Big Hole River, a tributary to the Jefferson River. Kalsta Bridge is the next access site upstream from Glen; Notch

Bottom is the next site downstream. Of the 13 FAS's on the Big Hole River, only 2 others have concrete boat ramps: Fishtrap Creek FAS, 63 miles upstream, and George Grant Memorial FAS, 39 miles upstream. Also, a Decision Notice to build a concrete ramp at Salmon Fly FAS, 20 miles upstream, was issued on August 19, 2009, and construction is scheduled for fall 2010.

Glen FAS is a popular FAS for both anglers and campers. No camping fees are charged at Glen FAS, so there has been no revenue generated from camping at Glen FAS though charging camping fees in the future is a possibility. Average FAS annual operations and personal services costs for Fiscal Year 2010 are approximately \$3673.

The installation of a new concrete bridge on Burma Road over the Big Hole River has made the existing boat ramp location difficult to access and maintain. The purpose of this project is to relocate the boat ramp to a point farther downstream for easier access and to better define roads and parking. The new boat ramp will be single-wide concrete with a gravel cul-de-sac. One new campsite will be developed at the existing boat ramp access road, and 5 at other locations within the FAS. New prefabricated fire rings and picnic tables will be placed at the existing primitive campsites. Barrier rocks will be placed to delineate roadways and parking and to discourage unauthorized vehicle traffic.

Figure 4. Existing Pioneered Boat Ramp at Glen FAS



Figure 5. Glen FAS Proposed Improvement Project Preliminary Concept Site Plan



PART II. ENVIRONMENTAL REVIEW

1. Description and analysis of reasonable alternatives:

Alternative A: No Action

Use of the existing pioneered boat launch, which is difficult to access due to obstacles and limited room to maneuver vehicles, would continue. The parking area would not be improved nor would fire rings or picnic tables be replaced. New campsites would also not be developed. FWP would continue to provide routine maintenance to the existing facilities as it has done in the past.

Preferred Alternative B: Proposed Action

Building a single-wide concrete boat ramp with a cul-de-sac to facilitate easy turn around of vehicles and trailers; improving the existing gravel parking lot and clarifying parking areas; reclaiming the existing boat ramp; developing 6 new campsites within the FAS; and replacing existing fire rings and picnic tables at the existing primitive campsites. Campsite improvements are dependent upon cost and available funding.

2. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

There are no mitigations, stipulations, or other controls associated with this action, therefore, no evaluation is necessary. Final design plans and specifications for the proposed project will be developed by FWP staff. All county, state and federal permits listed in Part I 8 (a) above will be obtained by FWP as required. A private contractor selected through the State's contracting processes will complete the construction.

PART III. ENVIRONMENTAL REVIEW CHECKLIST

Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u>	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
Will the proposed action result in:						
a. **Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X		Yes	1b.
c. **Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X		Positive	1d.
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				

1b. A small portion of stream bank will be overlain by a concrete slab that will serve as a boat ramp. The existing pioneered boat ramp will be revegetated. FWP Best Management Practices (BMP) for Fishing Access Sites will be followed. (Appendix D)

1d. The concrete ramp will resist erosion. The re-contouring and revegetation of the pioneered ramp will reduce erosion.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

2. <u>AIR</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. **Emission of air pollutants or deterioration of ambient air quality? (Also see 13 (c).)			X		Yes	2a.
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. ***For P-R/D-J projects, will the project result in any discharge, which will conflict with federal or state air quality regs? (Also see 2a.)		NA				

2a. There may be a temporary effect on ambient air quality during the construction of the ramp and stabilization of the pioneered ramp from dust and vehicle emissions created by heavy equipment. FWP Best Management Practices will be followed (Appendix D).

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** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

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3. WATER Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. *Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X		Yes	3a.
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?			X		Yes	3h.
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. ****For P-R/D-J, will the project affect a designated floodplain? (Also see 3c.)		NA				
m. ***For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a.)		NA				

3a. Construction of the concrete boat ramp will cause a temporary, localized increase in turbidity. FWP will obtain a Montana Department of Environmental Quality (DEQ) 318 Authorization Permit, as required. FWP Best Management Practices will be followed (Appendix D).

3h. There may be a slight risk of contamination from petroleum products from heavy equipment used during construction and bank stabilization activity. FWP Best Management Practices will be followed (Appendix D).

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** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

4. VEGETATION Will the proposed action result in?	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X		Yes	4a
b. Alteration of a plant community?			X		Positive	4b.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				4c.
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X		Yes	4e.
f. ****For P-R/D-J, will the project affect wetlands, or prime and unique farmland?		NA				

- 4a. The most common plants found at Glen FAS are black cottonwood, willow, snowberry, red-osier dogwood, and smooth brome. The most common exotic species found at the FAS is smooth brome. Common noxious weeds include spotted knapweed, Canada thistle, and occasionally leafy spurge. The concrete ramp will displace a small area of native and introduced grasses, forbs, and riparian shrubs. Restoration of the remaining pioneered area will promote the growth of willows and other riparian plants equaling or exceeding the area displaced.
- 4b. See comments above on 4a. The Natural Resource Information System (NRIS) identified black cottonwood/red-osier dogwood as a common riparian community that has been highly impacted by native ungulates and cattle. This occurrence, which is not truly high quality, still stands out as exceptional. The revegetation of the pioneered ramp will improve riparian plant communities.
- 4c. NRIS identified no plant species that are species of concern.
- 4e. Soils disturbed during ramp construction and bank revegetation may colonize with weeds. Construction materials, especially gravel, will be checked to ensure they are weed free. Disturbed areas will be re-seeded where necessary, and the area will continue to be managed for noxious weeds under the FWP Statewide Integrated Noxious Weed Management Plan.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

** 5. <u>FISH/WILDLIFE</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?		X				5b.
c. Changes in the diversity or abundance of nongame species?		X				5c.
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				5f.
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?			X		Yes	5g.
h. ****For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f.)		NA				
i. ***For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d.)		NA				

5b/5c. Wildlife species whose habitat distribution area includes Glen FAS include white-tailed and mule deer, mountain lion, moose, black bear, small mammals (voles, shrews, and mice), ruffed grouse, turkey, raptors, osprey, American white pelican, and migratory songbirds. There is a low likelihood that there would be changes in the diversity or abundance of game or non-game animals or birds since the FAS is already used.

5f. NRIS identified 4 species of concern in the vicinity of Glen FAS: greater sage grouse, bald eagle, gray wolf, and Arctic grayling. Greater sage grouse were observed within two miles of the FAS in 1976 and 1977. The proposed project is unlikely to have any impact on sage grouse since it is primarily an upland species. An active bald eagle nest is located in the Big Hole-Sodak territory about 1.5 miles downstream of Glen FAS, but the proposed project is unlikely to have any impacts on bald eagles in the area. The NRIS report noted that the FAS is within the habitat of gray wolf, and though there is wolf activity in the Pioneer and Highland Mountains there are no known collared packs in the area. Even though it is possible for wolves to pass through the project area, according to Fish, Wildlife and Parks' Wolf Management Specialist, the proposed project would have no negative or positive influences on wolves. Even though Arctic grayling have been observed in this section of river, they are rare. The project should have little impact on all aquatic species, including Arctic grayling, because of the small area that will be disturbed and the erosion prevention methods that will be used during construction. Establishment of a permanent boat ramp will have a long-term beneficial effect by reducing sedimentation and improving riparian health.

5g. The improved facilities may result in increased use, however the potential impact on existing wildlife in the area is temporary and minor since the FAS is already used.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

B. HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Increases in existing noise levels?			X		Yes	6a.
b. Exposure of people to severe or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				

6a. Some heavy equipment may be used during ramp construction which will temporarily increase noise levels at the site. FWP Best Management Practices will be followed. (Appendix D)

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?			X		Yes	7b.
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				

7b. The State Historic Preservation Office (SHPO) has requested a cultural survey be conducted before giving their clearance for the project to proceed. SHPO will again be consulted prior to any ground disturbing activity on the site to establish necessary mitigation efforts to protect cultural resources.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

8. <u>RISK/HEALTH HAZARDS</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor*	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?			X		Yes	8a.
b. Affect an existing emergency response or emergency evacuation plan, or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. ***For P-R/D-J, will any chemical toxicants be used? (Also see 8a)		NA				

8a. Physical disturbance of the soil during construction of the concrete ramp, parking lot improvement and bank revegetation may introduce noxious weeds to the site. FWP actively manages noxious weeds on the FAS in conjunction with Beaverhead County Weed District and will continue to use an integrated approach to control any new occurrence of noxious weeds, as outlined in the FWP Statewide Integrated Noxious Weed Management Plan. The integrated plan uses a combination of biological, mechanical and herbicidal treatments to control noxious weeds.

9. <u>COMMUNITY IMPACT</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?			X		Yes	9e.

9e. There is a potential for an increase in use due to a more accessible boat ramp and additional campsites and therefore potential increased traffic to the FAS. The proposed improvements to the parking area should help alleviate vehicle congestion at the FAS.

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** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u> Will the proposed action result in:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased use of any energy source?		X				
e. **Define projected revenue sources		X				
f. **Define projected maintenance costs.		X				10 f.

The proposed project will have no impact on public service, taxes or utilities.

10f. Average annual operating and personal expenses for Fiscal Year 2010 are approximately \$3673.

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** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

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** 11. <u>AESTHETICS/RECREATION</u>	IMPACT *					
	Will the proposed action result in:	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X				
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. **Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report.)			X		Positive	11c.
d. ***For P-R/D-J, will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c.)		NA				

11c. Improving launching facilities, the parking lot and existing campsites, and adding campsites will improve the quality of recreation by providing recreationists a more user-friendly site by making loading and unloading more easily accessible and traffic flow efficient. In addition, any public safety issues related to the close proximity of the new bridge to the primitive boat ramp will be alleviated.

12. <u>CULTURAL/HISTORICAL RESOURCES</u>	IMPACT *					
	Will the proposed action result in:	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *
a. **Destruction or alteration of any site, structure or object of prehistoric historic, or paleontological importance?			X		Yes	12a.
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. ****For P-R/D-J, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12.a.)		NA				

12a. The State Historic Preservation Office (SHPO) has requested a cultural survey be conducted before giving their clearance for the project to proceed. SHPO will again be consulted prior to any ground disturbing activity on the site to establish necessary mitigation efforts to protect cultural resources.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

SIGNIFICANCE CRITERIA

13. <u>SUMMARY EVALUATION OF SIGNIFICANCE</u> Will the proposed action, considered as a whole:	IMPACT *					
	Unknown *	None	Minor *	Potentially Significant	Can Impact Be Mitigated *	Comment Index
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. ***For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e.)		NA				
g. ****For P-R/D-J, list any federal or state permits required.		NA				

Because of the limited scope of the proposed improvements, it is expected there will be a limited number of impacts to the physical, biological, and human environments. When considered over the long term, the proposed action poses significant positive effects towards the public's continued access of a popular recreation area on the Big Hole River.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

PART III. NARRATIVE EVALUATION AND COMMENT

Because of the limited scope of the proposed improvements, it is expected there will be a limited number of impacts to the physical, biological, and human environments. When considered over the long term, the proposed action poses significant positive effects towards the public's continued access of a popular recreation area on the Big Hole River.

The minor impacts that were identified in the previous section are small in scale and will not influence the overall environment of the immediate area. The natural environment will continue to provide habitat to transient and permanent wildlife species and will continue to be open to the public for access to the river for fishing, floating, boating, wildlife viewing, and camping.

The proposed alternative will have little impact on the local wildlife species that frequent the property, will not increase negative conditions that stress wildlife populations, and is not considered critical habitat for any species.

The Big Hole River supports the last remaining native population of fluvial Arctic grayling, a species of special concern, in the lower 48 states. The highest concentration of Arctic grayling occur in the upper reaches of the Big Hole River. They are not expected to be affected by the construction of the boat ramp or by stabilization activities and will ultimately benefit their population by reducing sedimentation into the river.

Many of the minor impacts are expected to be only for the relatively short duration of the construction period with no lasting negative effects on the local environment. For those actions requiring minor mitigation, such as disturbances to soils that could increase the possibility of noxious weeds spreading at the site, efforts will be taken to diminish those impacts.

PART IV. PUBLIC PARTICIPATION

- 1. Describe the level of public involvement for this project, if any, and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?**

The public will be notified in the following manners to comment on the proposed improvements of Glen FAS:

- Two public notices in each of these papers: the *Montana Standard*, the *Dillon Tribune* and the *Helena Independent Record*
- Public notice on the Fish, Wildlife & Parks web page: <http://fwp.mt.gov>.
- Direct notice will be given to adjacent landowners.
- Draft EA's will be available at the FWP Region 3 Headquarters in Bozeman and the FWP State Headquarters in Helena.
- A news release will be prepared and distributed to a standard list of media outlets interested in FWP Region 3 issue.

Copies of this environmental assessment will be distributed to the neighboring landowners and interested parties to ensure their knowledge of the proposed project.

This level of public notice and participation is appropriate for a project of this scope having limited impacts, many of which can be mitigated.

2. Duration of comment period, if any.

The public comment period will extend for (30) thirty days following the publication of the second legal notice in area newspapers. Written comments will be accepted until 5:00 p.m., March 22 ,2010 and can be e-mailed to tgarrett@mt.gov or mailed to the address below:

Glen Fishing Access Site Proposed Improvement Project
Montana Fish, Wildlife & Parks
1400 South 19th Avenue
Bozeman, MT 59718

If requested within the comment period, FWP will schedule and conduct a public meeting on this proposed project.

PART V. EA PREPARATION

**1. Based on the significance criteria evaluated in this EA, is an EIS required? NO
If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.**

Based on an evaluation of impacts to the physical and human environment under MEPA, this environmental review revealed no significant negative impacts from the proposed action: therefore, an EIS is not necessary and an environmental assessment is the appropriate level of analysis. In determining the significance of the impacts, Fish, Wildlife and Parks assessed the severity, duration, geographic extent, and frequency of the impact, the probability that the impact would occur or reasonable assurance that the impact would not occur. FWP assessed the growth-inducing or growth-inhibiting aspects of the impact, the importance to the state and to society of the environmental resource or value affected, any precedent that would be set as a result of an impact of the proposed action that would commit FWP to future actions; and potential conflicts with local, federal, or state laws. As this EA revealed no significant impacts from the proposed actions, an EA is the appropriate level of review and an EIS is not required.

2. Persons responsible for preparing the EA:

Todd Garrett
Fishing Access Site Manager
1400 South 19th Avenue
Bozeman, MT 59718
tgarrett@mt.gov
406-994-4042

Andrea Darling
FWP EA Contractor
39 Big Dipper Drive
Clancy, MT 59634
apdarling@gmail.com

Jerry Walker
Regional Parks Manager, Region 3
1400 South 19th Avenue
Bozeman, MT 59718
gwalker@mt.gov
406-994-4042

3. List of agencies consulted during preparation of the EA:

Montana Fish, Wildlife & Parks

 Parks Division

 Wildlife Division Bureau

 Fisheries Division Bureau

 Design & Construction Bureau

 Legal Bureau

Montana State Historic Preservation Office (SHPO)

Montana Department of Commerce – Tourism

Montana Natural Heritage Program – Natural Resources Information System (NRIS)

Beaverhead County Weed District

APPENDICES

A. MCA 23-1-110 Qualification Checklist

B. Native Species Report Montana Natural Heritage Program (MNHP)

C. Tourism Report – Department of Commerce

D. Best Management Practices Final FAS BMP's Department of Fish, Wildlife & Parks

APPENDIX A
23-1-110 MCA
PROJECT QUALIFICATION CHECKLIST

Date: September 14, 2009

Person Reviewing: Andrea Darling

Project Location: Glen FAS is along the Big Hole River about 1.5 miles south of Glen, Montana in Beaverhead County, Section 24 T4S R9W.

Description of Proposed Work: Montana Fish, Wildlife & Parks proposes to construct a single-wide concrete boat ramp with cul-de-sac downstream from the existing pioneered boat ramp; create one new campsite in the location of the existing boat ramp and 5 new campsites in other locations within the FAS; and better define roadways and parking areas.

The following checklist is intended to be a guide for determining whether a proposed development or improvement is of enough significance to fall under 23-1-110 rules. (Please check all that apply and comment as necessary.)

A. New roadway or trail built over undisturbed land?

B. New building construction (buildings <100 sf and vault latrines exempt)?

C. Any excavation of 20 c.y. or greater?

Comments: *This project will require more than 20 c.y. of material to be excavated during the construction of the single-wide boat ramp and cul-e-sac. 240 c y of topsoil from the Poindexter parking project will be deposited at Glen FAS in a location not to interfere with the access to be later used as part of the Glen FAS Proposed Improvements Project.*

D. New parking lots built over undisturbed land or expansion of existing lot that increases parking capacity by 25% or more?

Comments:

E. Any new shoreline alteration that exceeds a double-wide boat ramp or handicapped fishing station?

F. Any new construction into lakes, reservoirs, or streams?

Comments: *A single-wide concrete boat ramp will be built on the river bank.*

G. Any new construction in an area with National Registry quality cultural artifacts (as determined by State Historical Preservation Office)?

Comments: *The SHPO identified potential cultural artifacts within the boundaries of Glen FAS. A new cultural survey will be conducted. FWP will insure that the proposed project does not disturb any cultural artifacts.*

H. Any new above ground utility lines?

I. Any increase or decrease in campsites of 25% or more of an existing number of campsites?

Comments: *6 new campsites are proposed.*

J. Proposed project significantly changes the existing features or use pattern; including effects of a series of individual projects?

If any of the above is checked, 23-1-110 MCA rules apply to this proposed work and should be documented on the MEPA/HB495 CHECKLIST. Refer to MEPA/HB495 Cross Reference Summary for further assistance.

APPENDIX B

SENSITIVE PLANTS AND ANIMALS IN THE GLEN FAS AREA

Species of Concern Terms and Definitions

A search of the Montana Natural Heritage Program (MNHP) element occurrence database (<http://nris.mt.gov>) indicates no known occurrences of federally listed endangered, threatened or proposed threatened or endangered plant or animal species in the proposed project site. Mealy primrose, dwarf phacelia and annual Indian paintbrush were found in an upland site about two miles from the project area. The search also indicated that the project area is within the habitat for gray wolf, greater sage grouse and Arctic grayling. Please see the next page for more information on these species.

Montana Species of Concern. The term “**Species of Concern**” includes taxa that are at-risk or potentially at-risk due to rarity, restricted distribution, habitat loss, and/or other factors. The term also encompasses species that have a special designation by organizations or land management agencies in Montana, including: Bureau of Land Management Special Status and Watch species; U.S. Forest Service Sensitive and Watch species; U.S. Fish and Wildlife Service Threatened, Endangered and Candidate species.

Status Ranks (Global and State)

The international network of Natural Heritage Programs employs a standardized ranking system to denote global (**G** -- range-wide) and state status (**S**) (Nature Serve 2003). Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are “at-risk”. Rank definitions are given below. A number of factors are considered in assigning ranks -- the number, size and distribution of known “occurrences” or populations, population trends (if known), habitat sensitivity, and threat. Factors in a species’ life history that make it especially vulnerable are also considered (e.g., dependence on a specific pollinator).

Status Ranks

Code	Definition
G1 S1	At high risk because of extremely limited and/or rapidly declining numbers, range, and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.
G2 S2	At risk because of very limited and/or declining numbers, range, and/or habitat, making it vulnerable to global extinction or extirpation in the state.
G3 S3	Potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas.
G4 S4	Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.
G5 S5	Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

SENSITIVE PLANTS AND ANIMALS IN THE VICINITY OF GLEN FAS, BIG HOLE RIVER

1. *Haliaeetus leucocephalus* (Bald Eagle)

Natural Heritage Ranks

State: **S3**

Global: **G5**

Federal Agency Status:

U.S. Fish and Wildlife Service: **DM**

U.S. Forest Service: **Threatened**

U.S. Bureau of Land Management: **Special Status**

Element Occurrence data was reported of bald eagle in the proximate area of this parcel. Last observation date was 2004.

2. *Centrocercus urophasianus* (Greater Sage Grouse)

Natural Heritage Ranks

State: **S2**

Global: **G4**

Federal Agency Status:

U.S. Fish and Wildlife Service:

U.S. Forest Service: **Sensitive**

U.S. Bureau of Land Management: **Sensitive**

Element Occurrence data reported of greater sage grouse in the proximate area of this parcel. Last observation date was 1977.

3. *Thymallus arcticus* (Arctic Grayling)

Natural Heritage Ranks

State: **S1**

Global: **G5**

Federal Agency Status:

U.S. Fish and Wildlife Service:

U.S. Forest Service:

U.S. Bureau of Land Management:

Element Occurrence data reported of Arctic grayling in the proximate area of this parcel. Last observation date was not recorded.

4. *Canis Lupus* (Gray Wolf)

Natural Heritage Ranks

State: **S3**

Global: **G4**

Federal Agency Status:

U.S. Fish and Wildlife Service: **LE**

U.S. Forest Service: **Endangered**

U.S. Bureau of Land Management: **Special Status**

No Element Occurrence data reported of gray wolf in the proximate area of this parcel. Last observation date was 2006.

APPENDIX C

TOURISM REPORT

MONTANA ENVIRONMENTAL POLICY ACT (MEPA) & MCA 23-1-110

The Montana Department of Fish, Wildlife and Parks has initiated the review process as mandated by MCA 23-1-110 and the Montana Environmental Policy Act in its consideration of the project described below. As part of the review process, input and comments are being solicited. Please complete the project name and project description portions and submit this form to:

Carol Crockett, Visitor Services Manager
Travel Montana-Department of Commerce
301 S. Park Ave.
Helena, MT 59601

Project Name: Glenn Fishing Access Site Proposed Improvements Project

Project Description: The installation of a new concrete bridge on Burma Road over the Big Hole River has made the existing boat ramp location difficult to access and to maintain. The purpose of this project is to relocate the boat ramp to a point farther downstream for easier access and to clean up and better define roads and parking. The new boat ramp will be single wide concrete with a gravel cul-de-sac. One campsite will be developed at the existing boat ramp access road and 5 additional new campsites at other locations within the FAS, . Barrier rocks will be placed to delineate roadways and parking and to discourage unauthorized vehicle traffic.

1. Would this site development project have an impact on the tourism economy?
NO **YES** If **YES**, briefly describe:
Yes, as described, the project has the potential to positively impact the tourism and recreation industry economy

2. Does this impending improvement alter the quality or quantity of recreation/tourism opportunities and settings?
NO **YES** If **YES**, briefly describe:

Yes, as described, the project has the potential to improve the quality and quantity of tourism and recreational opportunities.

Signature Carol Crockett, Visitor Services Manager Date 7/29/09

APPENDIX D
MONTANA FISH, WILDLIFE AND PARKS
BEST MANAGEMENT PRACTICES FOR FISHING ACCESS SITES
10-02-02
Updated May 1, 2008

I. ROADS

A. Road Planning and location

1. Minimize the number of roads constructed at the FAS through comprehensive road planning, recognizing foreseeable future uses.
 - a. Use existing roads, unless use of such roads would cause or aggravate an erosion problem.
2. Fit the road to the topography by locating roads on natural benches and following natural contours. Avoid long, steep road grades and narrow canyons.
3. Locate roads on stable geology, including well-drained soils and rock formations that tend to dip into the slope. Avoid slumps and slide-prone areas characterized by steep slopes, highly weathered bedrock, clay beds, concave slopes, hummocky topography, and rock layers that dip parallel to the slope. Avoid wet areas, including seeps, wetlands, wet meadows, and natural drainage channels.
4. Minimize the number of stream crossings.
 - a. Choose stable stream crossing sites. "Stable" refers to streambanks with erosion-resistant materials and in hydrologically safe spots.

B. Road Design

1. Design roads to the minimum standard necessary to accommodate anticipated use and equipment. The need for higher engineering standards can be alleviated through proper road-use management. "Standard" refers to road width.
2. Design roads to minimize disruption of natural drainage patterns. Vary road grades to reduce concentrated flow in road drainage ditches, culverts, and on fill slopes and road surfaces.

C. Drainage from Road Surface

1. Provide adequate drainage from the surface of all permanent and temporary roads. Use outsloped, insloped or crowned roads, installing proper drainage features. Space road drainage features so peak flow on road surface or in ditches will not exceed their capacity.
 - a. Outsloped roads provide means of dispersing water in a low-energy flow from the road surface. Outsloped roads are appropriate when fill slopes are

stable, drainage will not flow directly into stream channels, and transportation safety can be met.

b. For insloped roads, plan ditch gradients steep enough, generally greater than 2%, but less than 8%, to prevent sediment deposition and ditch erosion. The steeper gradients may be suitable for more stable soils; use the lower gradients for less stable soils.

c. Design and install road surface drainage features at adequate spacing to control erosion; steeper gradients require more frequent drainage features. Properly constructed drain dips can be an economical method of road surface drainage. Construct drain dips deep enough into the sub-grade so that traffic will not obliterate them.

2. For ditch relief/culverts, construct stable catch basins at stable angles. Protect the inflow end of cross-drain culverts from plugging and armor if in erodible soil. Skewing ditch relief culverts 20 to 30 degrees toward the inflow from the ditch will improve inlet efficiency.

3. Provide energy dissipators (rock piles, slash, log chunks, etc.) where necessary to reduce erosion at outlet of drainage features. Cross-drains, culverts, water bars, dips, and other drainage structures should not discharge onto erodible soils or fill slopes without outfall protection.

4. Route road drainage through adequate filtration zones, or other sediment-settling structures. Install road drainage features above stream crossings to route discharge into filtration zones before entering a stream.

D. Construction/Reconstruction

1. Stabilize erodible, exposed soils by seeding, compacting, riprapping, benching, mulching, or other suitable means.

2. At the toe of potentially erodible fill slopes, particularly near stream channels, pile slash in a row parallel to the road to trap sediment. When done concurrently with road construction, this is one method to effectively control sediment movement and it also provides an economical way of disposing of roadway slash. Limit the height, width and length of these "slash filter windrows" so not to impede wildlife movement. Sediment fabric fences or other methods may be used if effective.

3. Construct cut and fill slopes at stable angles to prevent sloughing and subsequent erosion.

4. Avoid incorporating potentially unstable woody debris in the fill portion of the road prism. Where possible, leave existing rooted trees or shrubs at the toe of the fill slope to stabilize the fill.

5. Place debris, overburden, and other waste materials associated with construction and maintenance activities in a location to avoid entry into streams. Include these waste areas in soil stabilization planning for the road.

6. When using existing roads, reconstruct only to the extent necessary to provide adequate drainage and safety; avoid disturbing stable road surfaces. Consider abandoning existing roads when their use would aggravate erosion.

E. Road Maintenance

1. Grade road surfaces only as often as necessary to maintain a stable running surface and to retain the original surface drainage.
2. Maintain erosion control features through periodic inspection and maintenance, including cleaning dips and cross-drains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from culverts.
3. Avoid cutting the toe of cut slopes when grading roads, pulling ditches, or plowing snow.
4. Avoid using roads during wet periods if such use would likely damage the road drainage features. Consider gates, barricades or signs to limit use of roads during wet periods.

II. RECREATIONAL FACILITIES (parking areas, campsites, trails, ramps, restrooms)

A. Site Design

1. Design a site that best fits the topography, soil type, and stream character, while minimizing soil disturbance and economically accomplishing recreational objectives. Keep roads and parking lots at least 50 feet from water; if closer, mitigate with vegetative buffers as necessary.
2. Locate foot trails to avoid concentrating runoff and provide breaks in grade as needed. Locate trails and parking areas away from natural drainage systems and divert runoff to stable areas. Limit the grade of trails on unstable, saturated, highly erosive, or easily compacted soils
3. Scale the number of boat ramps, campsites, parking areas, bathroom facilities, etc. to be commensurate with existing and anticipated needs. Facilities should not invite such use that natural features will be degraded.
4. Provide adequate barriers to minimize off-road vehicle use

B. Maintenance: Soil Disturbance and Drainage

1. Maintenance operations minimize soil disturbance around parking lots, swimming areas and campsites, through proper placement and dispersal of such facilities or by reseeding disturbed ground. Drainage from such facilities should be promoted through proper grading.
2. Maintain adequate drainage for ramps by keeping side drains functional or by

maintaining drainage of road surface above ramps or by crowning (on natural surfaces).

3. Maintain adequate drainage for trails. Use mitigating measures, such as water bars, wood chips, and grass seeding, to reduce erosion on trails.

4. When roads are abandoned during reconstruction or to implement site-control, they must be reseeded and provided with adequate drainage so that periodic maintenance is not required.

III. RAMPS AND STREAM CROSSINGS

A. Legal Requirements

1. Relevant permits must be obtained prior to building bridges across streams or boat ramps. Such permits include the SPA 124 permit, the COE 404 permit, and the DNRC Floodplain Development Permit.

B. Design Considerations

1. Placement of boat ramp should be such that boats can load and unload with out difficulty and the notch in the bank where the ramp was placed does not encourage bank erosion. Extensions of boat ramps beyond the natural bank can also encourage erosion.

2. Adjust the road grade or provide drainage features (e.g. rubber flaps) to reduce the concentration of road drainage to stream crossings and boat ramps. Direct drainage flow through an adequate filtration zone and away from the ramp or crossing through the use of gravel side-drains, crowning (on natural surfaces) or 30-degree angled grooves on concrete ramps.

3. Avoid unimproved stream crossings on permanent streams. On ephemeral streams, when a culvert or bridge is not feasible, locate drive-throughs on a stable, rocky portion of the stream channel.

4. Unimproved (non-concrete) ramps should only be used when the native soils are sufficiently gravelly or rocky to withstand the use at the site and to resist erosion.

C. Installation of Stream Crossings and Ramps

1. Minimize stream channel disturbances and related sediment problems during construction of road and installation of stream crossing structures. Do not place erodible material into stream channels. Remove stockpiled material from high water zones. Locate temporary construction bypass roads in locations where the stream course will have a minimal disturbance. Time the construction activities to protect fisheries and water quality.

2. Where ramps enter the stream channel, they should follow the natural streambed in order to avoid changing stream hydraulics and to optimize use of boat trailers.

3. Use culverts with a minimum diameter of 15 inches for permanent stream crossings and cross drains. Proper sizing of culverts may dictate a larger pipe and should be based on a 50-year flow recurrence interval. Install culverts to conform to the natural streambed and slope on all perennial streams and on intermittent streams that support fish or that provide seasonal fish passage. Place culverts slightly below normal stream grade to avoid culvert outfall barriers. Do not alter stream channels upstream from culverts, unless necessary to protect fill or to prevent culvert blockage. Armor the inlet and/or outlet with rock or other suitable material where needed.
4. Prevent erosion of boat ramps and the affected streambank through proper placement (so as to not catch the stream current) and hardening (riprap or erosion resistant woody vegetation).
5. Maintain a 1-foot minimum cover for culverts 18-36 inches in diameter, and a cover of one-third diameter for larger culverts to prevent crushing by traffic.