CHECKLIST ENVIRONMENTAL ASSESSMENT

RECEIVED
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POLICY OFFICE

Project Name:	Rock Bottom
Proposed Implementation Date:	November 15, 2004
Proponent:	Department of Natural Resources and Conservation / Dillon Unit
Location:	W1/2 Sec.15, SE1/4 Sec.16 and NW1/4 Sec.22, Township 4 South, Range 16 West
County:	Beaverhead

I. TYPE AND PURPOSE OF ACTION

Commercial limited access timber sale to harvest an estimated 100 MBF of lodgepole pine timber from approximately 28 acres. Generate revenue for the school trust, improve forest health through removal of overstocked timber and bring treated portions of stand closer to a semblance of historic conditions. (See Attachments A & B for vicinity and site specific locations).

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

A field review was conducted in September 2003 by Ken Wigen and DNRC forester Chuck Barone.

Letters were sent to the following seeking comments for the proposed timber harvest:

MT Fish, Wildlife and Parks, Regional Supervisor, P. Flowers
Foster Company (Lessee)
Forty Bar Ranch, Inc. (Lessee)
Burton & Ed Hopewell (Lessee)
Big Hole Grazing Association

Other contacts:

Walt Willey (Sunnyslope Land & Cattle Co.)
MT FWP, Wildlife Biologist, C. Fager
MT FWP, Fisheries Management Biologist, Richard Oswald
DNRC, Archaeologist, P. Rennie
DNRC, Wildlife Biologist, R. Baty
Montana Natural Heritage Program
Montana Fisheries Information System

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

The Beaverhead County Weed Control administers the State weed laws in Beaverhead County. The Weed Control is contacted by the DNRC and given a weed plan for each project.

A Beaverhead County burning permit would be required if slash burning is done.

3. ALTERNATIVES CONSIDERED:

Action Alternative: Harvest approximately 100 MBF of overstocked timber from an estimated 28 acres of State land.

Stand treatments would consist of harvesting the majority of the merchantable conifer sawtimber from the harvest units. Non-merchantable conifer, aspen and willow would be reasonably protected during harvest operations. Harvest design is directed at promoting restoration of the original aspen stands and reducing overstocking of conifer species while maintaining some residual cover in the treated stands. Harvest activities would occur during the winter season of 2004/2005 on frozen and snow-covered ground. Approximately 3.3 miles of temporary snow road would be used to access the harvest units. No road reconstruction or construction would be needed. Excess slash would be consolidated at landings and burned.

No Action Alternative: Current management actions would be maintained and forest management and harvesting actions would be deferred. Opportunity to recover timber value through limited access would not be realized. These tracts are currently leased for grazing.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

The proposed project area is located on gentle ground on the remnants of tertiary valley-fill sediments consisting of gravelly and cobbly alluvium or glacial till.

Geology is stable and no especially unique or unstable geology occur within the State parcels. Soils within the proposed project area support lodgepole pine and aspen stands, willow and open grassland sites. The soils are moderately drained and erosion risk is low due to the flat topography. The proposed project area is heavily irrigated from spring through fall, leaving the majority of the soils saturated during this period of time. The proposed harvest area slopes are 0-5% and well suited for tractor operations. Soil compaction potential is low with the proposed winter harvest operations.

The primary soil concerns associated with timber harvest are direct effects of rutting and displacement of surface soils by equipment operation and road construction. Winter operations and use of a temporary snow road would provide for minimal potential soil impacts Harvest operations would retain a proportion of coarse woody debris and fine slash to help provide shade and organic matter to maintain soil productivity.

Soil effects would be minimal and long-term productivity would be maintained or improved by implementing mitigation measures, BMP's and reducing the stocking to make nutrients available to retained trees.

No cumulative effects are expected.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

The proposed project area located within the Big Hole River drainage and lies between Rock Creek, a tributary of the Big Hole River, and Big Lake Creek, a tributary of Rock Creek. The Big Hole River and Rock Creek are listed on the Montana 303(d) list as impaired streams, Big Lake Creek is not. Probable causes of the 303(d)

listing include bank erosion, dewatering, flow alteration, metals, and other habitat alterations, and the probable sources include agriculture, crop-related sources, grazing-related sources, resource extraction, mine tailings, habitat modification (other than hydromodification), and bank or shoreline modification/destabilization. As described, the listings are not associated with forest management activities.

The Missouri River drainage, including Rock Creek and Big Lake Creek, is classified as B-1 in the Montana Surface Water Quality Standards. The B-1 classification is for multiple use waters suitable for domestic use after conventional treatment, growth and propagation of cold-water fisheries, associated aquatic life and wildlife, and agricultural and industrial uses. The State has adopted Forestry Best Management Practices through its Nonpoint Source Management Plan as the principle means of controlling nonpoint source pollution from silvicultural activities.

Land management activities such as road construction, maintenance and use, and timber harvest can potentially increase levels of fine sediment delivery to streams if not properly located, designed, and mitigated. The primary risks to water quality that are associated with timber sales are roads, especially roads located along or crossing streams. Project activities would occur during the winter season on frozen and snow-covered ground. A temporary snow road would be used to access the harvest units. No road reconstruction or construction would be needed. Implementation of appropriate Best Management Practices and recommended mitigation measures would reduce the risk of soil erosion and sedimentation.

Given the small harvest area, season and duration of the proposed project, no road reconstruction or construction, flat topography and additional recommended mitigation measures, no foreseeable direct, indirect or cumulative impacts are anticipated to cold-water fisheries, water quality, water yield or any other beneficial uses associated with the Rock Creek and Big Lake Creek watersheds as a result of the proposed project.

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

The project includes piling and burning of logging slash. Localized short duration particulate emissions occur during slash burning. Slash burning is normally conducted in late October through November The DEQ and the Cooperative Airshed groups regulate particulate emissions during this period. Burning times are coordinated to 1) limit burning periods of acceptable smoke dispersion and 2) to limit the cumulative generation of particulates.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The proposed project is located on the east side of the Beaverhead Mountains in the irrigated grass types of the broad, flat upper Big Hole River valley. Slopes range from 0-5% with an elevation range of 6,300-6,500 feet.

Forested acres within the State parcels are dominated by lodgepole pine with a mix of aspen and willow. Regeneration is sparse with little understory vegetation due to heavy cattle use. Coarse woody debris is moderate consisting predominately of aspen.

At the turn of the century, the area was dominated by aspen and willow with a variety of other grasses, forbs and shrubs. Lodgepole pine was most likely not present or only sparsely represented. The absence of fire, in combination with encroachment, has resulted in the aspen being replaced by lodgepole pine. There is currently more total forest cover in Beaverhead County than in prior historical conditions.

Overall health and growth of all the conifer stands are good. Aspen health ranges from poor to good depending on degree of conifer encroachment. Units 1 and 2 are overstocked with conifer Unit 3 is presently an even mix of conifer and hardwoods; and is in the process of converting the original aspen stand to lodgepole pine.

There is evidence of past low-level selective harvest most likely from homesteading activities in the area but no indication of commercial timber harvesting. No old trees (greater than 150 years old) are found on the State tracts.

Of the 1,162 acres of State ownership, ~50 acres are forested. The proposed harvest represents 56% of the total forested acres and 1.9% of the total acres on the State parcels.

Harvesting an estimated 100 MBF of timber would alter the forest cover on approximately 28 acres. Harvest design is intended to maintain a semblance of historic conditions and promote regeneration of aspen stands through emulating mixed severity and stand replacing fires. Natural regeneration would be expected.

No rare plants or cover types have been noted or observed within the project area.

The DNRC requires the washing of equipment, seeding of grass and monitoring of disturbed areas to minimize the potential of noxious weeds being introduced.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

A variety of big game, small mammals, raptors, song and wading birds potentially use this area. Rock Creek and Big Lake Creek have several cold-water fisheries, including Artic grayling, brook and westslope cutthroat trout.

A small Great blue heron rookery is located within the boundaries of unit 2. The Great blue heron is protected under the Migratory Bird Act. The rookery is used only during the spring season. The proposed harvest would be during the winter and would not disturb the blue heron, as they are not present at this time of year. As an additional mitigation measure, a buffer area of three average tree lengths (~76 feet/tree, 228 total feet) surrounding the core rookery area would be established. No equipment would be allowed within the buffer area and no harvesting within the first 152 feet from the core rookery area. Within the outer 76 feet of the buffer area, a maximum of 10% of the merchantable timber would be allowed to be harvested.

Due to the size, season and duration of the proposed project, no road reconstruction or construction and additional recommended mitigation measures, no impacts are expected to wildlife and fisheries habitats.

(See Attachment E – Checklist for Endangered, Threatened and Sensitive Species)

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

No threatened or endangered species have been documented within the proposed project area. Preferred habitat for grizzly bear, gray wolf, lynx and bald eagles is not present or marginal within the project area. Lynx habitat is present within one mile west of the proposed project. Occasional use of the area from these species could potentially occur but is generally considered outside of their normal occupied habitat.

Of the cold-water fisheries within the project area, the primary species of interest are Artic grayling and westslope cutthroat trout (WCT). Both species are listed as a Montana Animal Species of Concern and identified by the Department of Natural Resources and Conservation (DNRC) as a sensitive species. Artic grayling have been documented in Rock Creek and Big Lake Creek within the proposed project area. WCT have been documented in the upper reaches of both of these creeks but there is no indication that WCT inhabit the lower reaches of where the proposed project is located.

Sphagnum bogs and moss mats have been identified one-half mile to the west of proposed unit 1 and are considered habitat for the northern bog lemming, a sensitive species. No northern bog lemming have been documented in this area and adequate habitat is not present within the project area. Habitat potential within the proposed project area is minimal and present grazing activities essentially insure poor habitat conditions will remain. The harvesting of timber during frozen, snow-covered conditions would minimize ground disturbance and would not alter potential habitat. Should sphagnum mats be identified within the proposed project area, the mats would be given an area of protection of 100 meters (per NHP field guide).

No other sensitive species have been documented or observed within the proposed project area.

Due to the size, season and duration of the proposed project, no road reconstruction or construction and additional recommended mitigation measures, no impacts are expected to occur to any endangered, threatened or sensitive species.

(See Attachments E & F – Checklist for Endangered, Threatened and Sensitive Species; Montana Natural Heritage Program/Montana Fisheries Information System)

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

There is no record that cultural resources exist within the proposed project area. No additional archaeological investigative work is recommended prior to harvest activities.

11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The proposed project is visible to the surrounding sparsely populated area but visual impacts would be buffered due to the gentle topography of the area and harvest design.

It is unlikely that aesthetics would be impacted adversely.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

NONE

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

DNRC adopted the Administrative Rules for Forest Management on March 13, 2003, applicable to management activities on forested State lands.

EA checklists were completed in January and August 2002 for nonmetalliferous mineral leases for Sections 16 & 21-T4S-R16W.

A range evaluation was conducted in June 1996 (Sections 15 & 16-T4S-R16W) and August 1999 (Section 21-T4S-R16W).

No cumulative impacts are expected.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project

NONE

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

NONE

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

People are currently employed in the wood products industry Due to the relatively small size of the timber sale program, there will be no measurable cumulative impact from this proposed action on employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

People are currently paying taxes from the wood products industry in the region. Due to the relatively small size of the timber sale program, there will be no measurable cumulative impact from this proposed action on tax revenues.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services.

There will be no measurable cumulative impacts related to demand for government services due to the small size of the timber sale program, the short-term impacts to traffic and the small possibility of a few people temporarily relocating to the area.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

In March 2003, DNRC adopted the Administrative Rules for Forest Management ARM 36.11.401 through 36.11.450 (the "Rules"). This project is planned under the requirements of the Rules.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Persons having legal access to the tract and possessing a valid state lands recreational use license or FWP conservation license may conduct recreational activities on the tract. The proposed project would not affect the existing access for the general public.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

There will be no measurable cumulative impacts related to population and housing due to the relatively small size of the timber sale program, and the fact that people are already employed in this occupation in the region.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

NONE

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

NONE

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The estimated return to the trust would be $15,075.00 (100 MBF of tractor sawtimber @ $150.75/MBF)

Income from grazing licenses of $3,539.70/year for 690 AUM of use and a non-metalliferous mineral lease of ~$300.00/year would continue with or without the harvest proposal.

EA Checklist Prepared By:	Name: Chuck Barone	Date: October 21, 2004
	Title: Dillon Unit Forester	

V. FINDING

25. ALTERNATIVE SELECTED:

After review, I have selected the proposed Action Alternative, to harvest approximately 100 MBF of overstocked timber from an estimated 28 acres of School Trust land and utilize approximately 3.3 miles of temporary snow road to access the harvest units. No road reconstruction or construction would be needed. I believe this alternative can be implemented in a manner that is consistent with the long-term sustainable natural resource management of the area while promoting forest health and diversity, promoting the restoration of original aspen stands, and generating revenue for the school trust from timber harvest.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

I conclude all identified potential impacts will be avoided or mitigated by the project size, short duration, timing, design, contract provisions, project administration, and BMP compliance, and no significant impacts will occur as a result of implementing the selected alternative.

MEASURES RECOMMENDED TO MITIGATE POTENTIAL IMPACTS:

1) Compliance with Forestry Best Management Practices (BMP's) and Streamside Management Zone (SMZ) laws.
2) Limit equipment operations to periods when soils are frozen or snow covered to minimize soil compaction, rutting and vegetative disturbance.
3) Retain all fine litter as feasible and 5-10 tons/acre of large woody debris >3" diameter
4) All road construction and logging equipment will be power washed and inspected prior to being brought on site. Sale area will be monitored for weeds following harvest and a treatment plan will be developed should noxious weeds occur.
5) At sale closure, grass seed skid trails (where needed) and landings with an appropriate seed mixture.
6) One snag and one snag recruit per acre, of the largest diameter class, will be retained where applicable. Cull live trees and cull snags will be retained where applicable.

7) Blue heron rookery site: A buffer area of three average tree lengths (~76 feet/tree, 228 total feet) surrounding the core rookery area will be established. No equipment will be allowed within the buffer area and no harvesting within the first 152 feet from the core rookery area. Within the outer 76 feet of the buffer area, a maximum of 10% of the merchantable timber will be allowed to be harvested.
8) Should sphagnum moss mats be identified within the proposed project area, the mats would be given an area of protection of 100 meters (per NHP field guide).

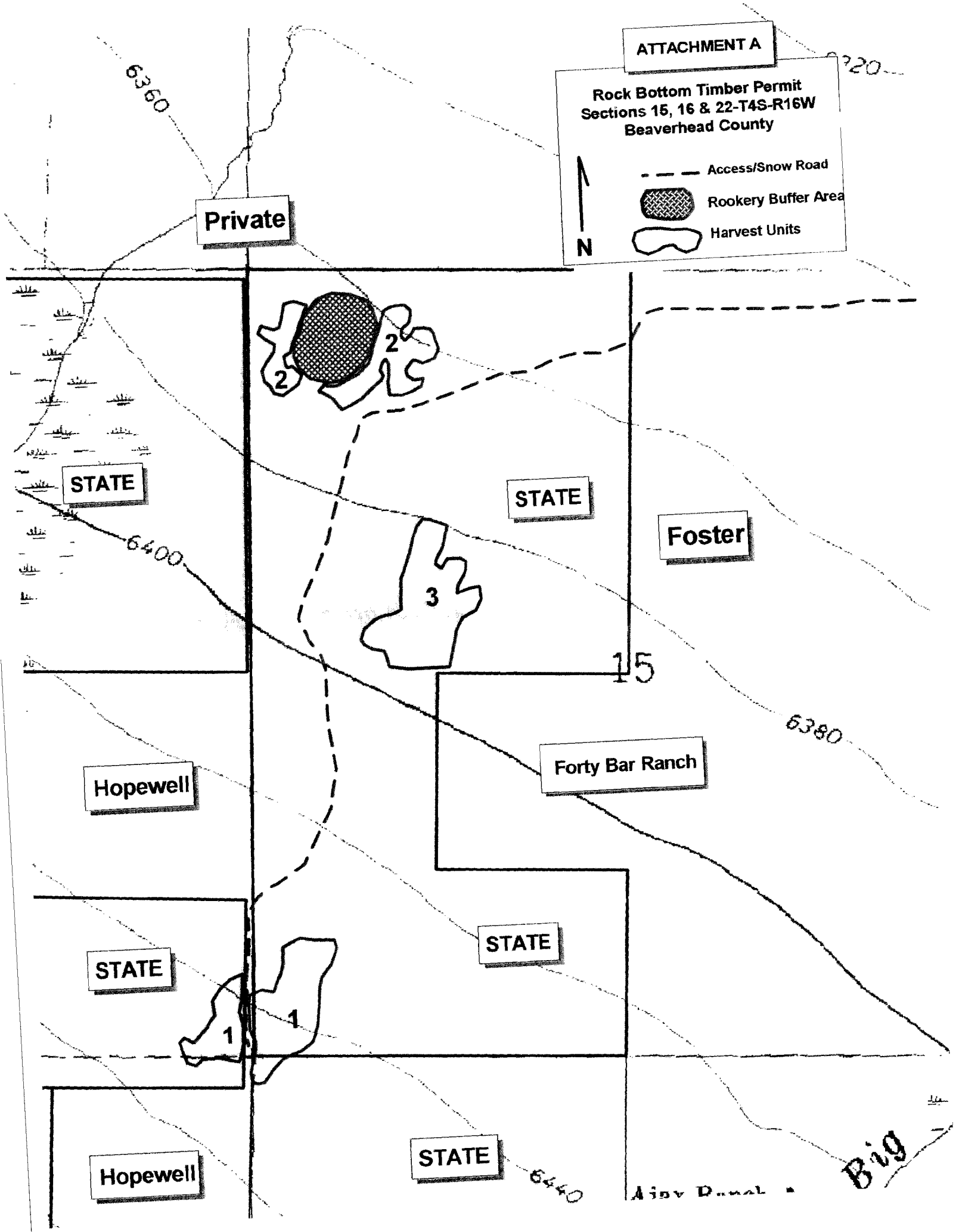
27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ] EIS	[ ] More Detailed EA	[X] No Further Analysis

EA Checklist Approved By:	**Name:** Richard A. Moore **Title:** Dillon Unit Manager	
Signature: Richard A. Moore		**Date:** 11/1/04

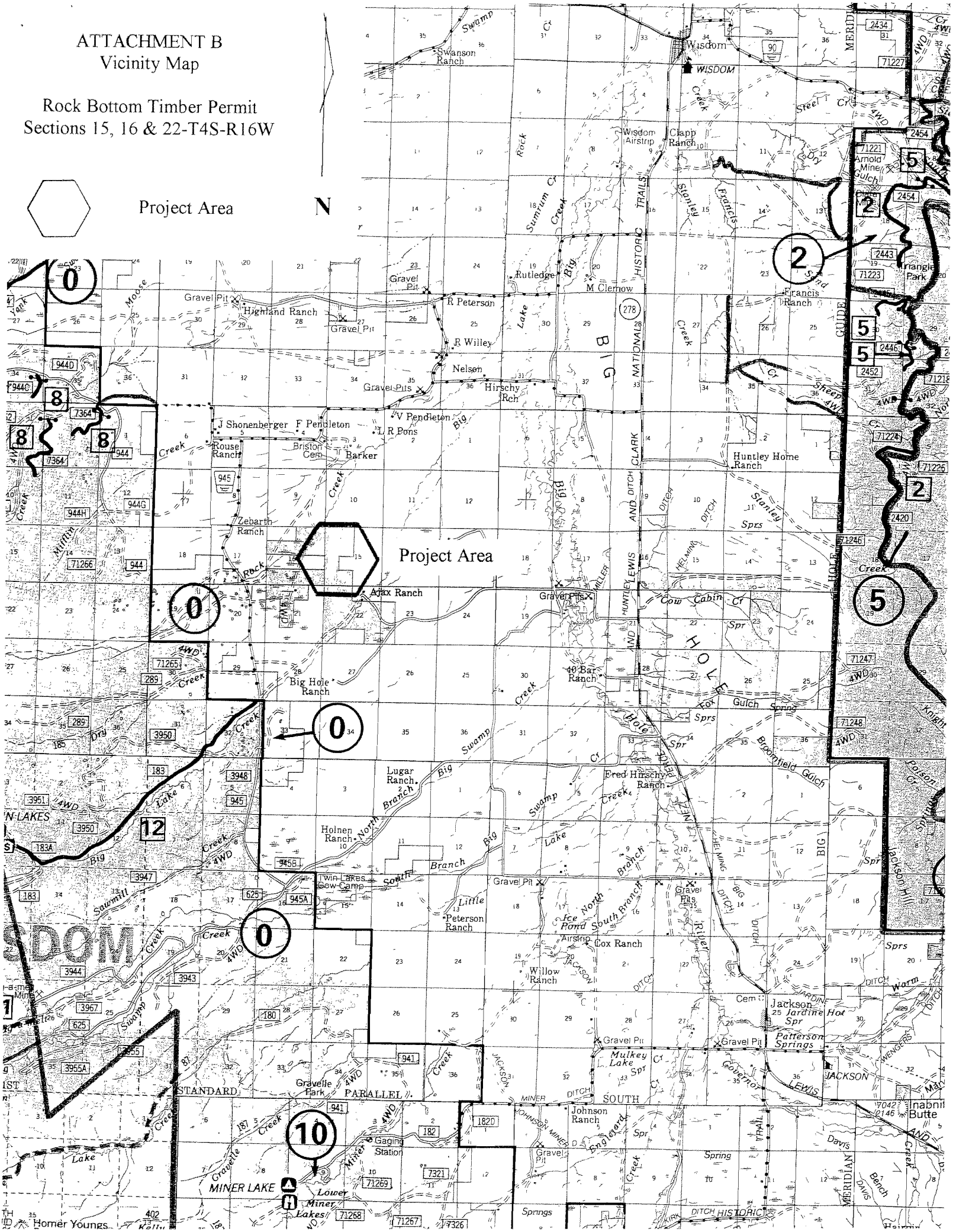
ATTACHMENTS

A – Site Specific Map
B – Vicinity Map
E – Checklist for Endangered, Threatened and Sensitive Species
F – Montana Natural Heritage Program/
Montana Fisheries Information System


ATTACHMENT A
Rock Bottom Timber Permit
Sections 15, 16 & 22-T4S-R16W
Beaverhead County
Access/Snow Road
Rookery Buffer Area
Harvest Units
N
Private
STATE
STATE
Foster
Forty Bar Ranch
Hopewell
STATE
STATE
Hopewell
STATE
15
1
2
3
6360
6400
6380
6440

ATTACHMENT B
Vicinity Map

Rock Bottom Timber Permit
Sections 15, 16 & 22-T4S-R16W



ATTACHMENT E

CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPEICES
Pertains to Section II. 9. of the DS-252 DNRC Environmental Checklist
CENTRAL LAND OFFICE

Threatened and Endangered Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Bald Eagle (*Haliaeetus leucocephalus*) Habitat: late-successional forest <1 mile from open water	[N] Bald Eagles have not been documented within the quarter latilong (L36C) that the proposed project is located in (Skaar 1996, MNHP 2003). No known nesting habitat occurs on, or within one mile of the proposed project area, and the project area likely occurs outside of any bald eagle nesting home range. No direct, indirect or cumulative effects to bald eagles associated with this project are anticipated.
Gray Wolf (*Canis lupus*) Habitat: ample big game pops., security from human activity	[N] The proposed project area falls within the Central Idaho Nonessential Experimental Area for gray wolves. The Battlefield Pack resides in the vicinity of the project area. Individuals from these packs or transients from other packs could occasionally use portions of the project area, however, due to the size, nature and location of the proposed project, activities associated with this proposal are not expected to effect wolves or recovery efforts. Should a new den be located within one mile of the project area, activities would cease and a DNRC Biologist would be contacted immediately. Mitigations would then be developed and implemented to minimize adverse impacts to wolves prior to initiating any activity.
Grizzly Bear (*Ursus arctos*) Habitat: recovery areas, security from human activity	[N] The proposed project area lies outside of any grizzly bear recovery area. The nearest recovery area is the Yellowstone Grizzly Bear Recovery Zone (USFWS 1993) situated 100 miles southeast of the project area. Grizzly bear use of the Beaverhead Mountains may occur, however, the project area is currently considered outside of occupied habitat (Interagency Occupied Habitat Map, September 2002). Riparian habitats preferred by bears occur in the project area along Rock Creek and Big Lake Creek. These creeks support moderate levels of hiding cover, and human access levels are presently high The potential for any measurable increases in bear-human conflicts following project activities are expected to be negligible. No adverse direct, indirect and cumulative impacts to bears as a result of this project are expected.

Harlequin Duck (*Histrionicus histrionicus*) Habitat: white-water streams, boulder and cobble substrates	[N] Harlequin ducks have not been documented in the quarter latilong (L36C) that the proposed project is located in (Skaar 1996, MNHP 2003). No high gradient streams suitable for use by harlequins occur within the project area or along proposed haul routes. No impacts to harlequin ducks would be expected to occur as a result of this project.
Peregrine Falcon (*Falco peregrinus*) Habitat: cliff features near open foraging areas and/or wetlands	[N] Peregrine Falcons have not been documented within the quarter latilong (L36C) that the proposed project is located in (Skaar 1996, MNHP 2003). No cliff features suitable for use by nesting peregrine falcons occur within 1 mile of the project area. No direct, indirect or cumulative effects associated with this project are anticipated.
Mountain Plover (*Charadrius montanus*) Habitat: short-grass prairie, alkaline flats, prairie dog towns	[N] No short-grass prairie or prairie dog towns occur on, or within one mile of the proposed project area. No impacts to mountain plovers are expected as a result of this project.
Townsend's Big-Eared Bat (*Plecotus townsendii*) Habitat: caves, caverns, old mines	[N] The DNRC is unaware of any mines or caves within the proposed project area or close vicinity that would be suitable for use by Townsend's big-eared bats. Impacts to Townsend's big-eared bats are not anticipated as a result of this project.
Black-tailed Prairie Dog (*Cynomys ludoviscianus*) Habitat: grasslands, short-grass prairie, sagebrush semi-desert	[N] Grassland habitats suitable for use by black-tailed prairie dogs do not occur within one mile of the proposed project area. Impacts to black-tailed prairie dogs are not anticipated.
Sage Grouse (*Centrocercus urophasianus*) Habitat: sagebrush semi-desert	[N] Sage grouse have not been documented in the quarter latilong (L36C) that the proposed project is located in (Skaar 1996, MNHP 2003). Sagebrush semi-desert habitats suitable for use by sage grouse do not occur within one mile of the project area. Impacts to sage grouse are not anticipated.

Montana Natural Heritage Program

Map Label	Scientific Name	Common Name
1	Thymallus arcticus montanus	Montana Arctic Grayling

Biological Information

Species of Concern (Y)/Potential Concern (W): Y

Element Subnational ID	11509	EO Number	4	Global Rank	G5T1Q	State Rank	S1
USFWS Endangered Species Status	C			Forest Service Status		BLM Status	SPECIAL STATUS

Observation Dates:	Last	1999	First	1977	

EO Data

THE ONLY ENTIRELY FLUVIAL POPULATION IN THE LOWER 48 STATES. MOST ADULTS SPAWN IN TRIBUTARIES AND WINTER IN THE MAINSTEM, ESPECIALLY BELOW WISDOM. NUMBERS DECLINED SIGNIFICANTLY SINCE STUDIES BEGAN - MAY HAVE STABILIZED IN LATE 1990s. THE BOUNDARIES FOR THIS OCCURRENCE ENCOMPASS ALL KNOWN OCCUPIED GRAYLING HABITAT IN THE BIG HOLE RIVER DRAINAGE. IN THE MAINSTEM, HIGHEST DENSITIES OCCUR FROM JACKSON TO DICKIE BRIDGE; GRAYLING ARE RARE ABOVE JACKSON AND BELOW DIVIDE. THE MOST IMPORTANT TRIBUTARIES ARE THE NORTH FORK AND SWAMP, STEELE AND DEEP CREEKS.

General Description

INCLUDES THE MAINSTEM FROM GOVERNOR CREEK TO GLEN PLUS THE FOLLOWING TRIBUTARIES: GOVERNOR CREEK, MINER CREEK, BIG LAKE CREEK, ROCK CREEK, SWAMP CREEK, STEELE CREEK, FRANCIS CREEK, 'SANDHOLLOW' CREEK, NORTH FORK (& POSSIBLY PARTS OF JOHNSON & MUSSIGBROD CREEKS), DOOLITTLE CREEK, PINTLAR CREEK, LAMARCHE CREEK, FISHTRAP CREEK AND DEEP CREEK.

General Comments

BOUNDARIES ON TRIBUTARIES APPROXIMATE. SOME FISH ALSO USE VARIOUS CHANNELS AND DITCHES IN THE UPPER VALLEY, ABOVE THE NORTH FORK

Directions

BIG HOLE RIVER DRAINAGE.

References

Byorth, P. A. 1995. Big Hole River arctic grayling recovery project: annual monitoring report 1994. Unpublished report submitted to the Fluvial Arctic Grayling Workgroup. Montana Department of Fish, Wildlife and Parks, Dillon. 38 pp.
Gilpin, M. 1996. A population viability analysis (PVA) of the Arctic grayling in southwestern Montana. Unpubl. report to MT Dept. Fish Wildl. Parks. 16 pp.
Hunter, C. (ed.). 1995. Proceedings of the first joint meeting of the Montana/North Dakota pallid workgroup and the fluvial arctic grayling workgroup. 18-19 January 1995, Bozeman, MT. 118 pp.
Kaya, C. M. 1990. Status report on fluvial arctic grayling (THYMALLUS ARCTICUS) in Montana. [Unpublished report.] Montana Department of Fish, Wildlife, and Parks. Helena, MT. 97 pp.
Montana Department of Fish, Wildlife, and Parks. No date. Montana Interagency Stream Database. Computerized database (also available on microfiche). Montana Department of Fish, Wildlife, and Parks, Helena, MT.
Montana Fish, Wildlife & Parks. 1959-to date Montana Rivers Information System. Information Services Unit, Fisheries Division, Helena, MT. http://nris.state.mt.us/wis/mris1.html or 406-444-3345
Montana Fluvial Arctic Grayling Workgroup. 1995. Montana fluvial arctic grayling restoration plan: final draft. Montana Department of Fish, Wildlife, and Parks. Helena. 21 pp.

Specimen

Montana Species of Concern
Rock Bottom
T04S R16W S: 15, 16, & 22

Search Area

Biological Data
- Vertebrate animal
- Invertebrate animal
- Nonvascular plant
- Other
- Vascular plant

Conservation Easements

Special Designations
- Other special Areas (ACEC, RNA, PRIM)
- Research Natural Areas (all agencies)
- Wilderness (all agencies)
- Wild and Scenic Rivers (all agencies)

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Army Corps of Engineers & US Dept of Defense
- National Park Service
- US Forest Service
- Other US Dept of Agriculture
- US Fish & Wildlife Service
- Bureau of Indian Affairs Trust
- Tribal
- State Trust
- Montana Fish, Wildlife, & Parks
- University & Institutions
- County & City
- Plum Creek
- Private Conservation
- Other private
- Water

Species locations depicted outside the search area have imprecisely known locations and may actually occur within the search area

Not all legend items may occur on map

Features shown on this map do not imply public access to any lands

This map displays management status, which may differ from ownership

Refer to accompanying documentation for full explanation of map features

MONTANA Natural Heritage Program

Natural Resource Information System
Montana State Library
PO Box 201800
Helena, MT 59620-1800
(406) 444-3009 mnhp@state.mt.us

December 09 2003
04MT0042

0.4 0 0.4 0.8 1.2 1.6 2 Miles

ATTACHMENT F

Rock Creek **Tributary Of: Big Hole River** **Total Length (Mi): 22.8**

Report is based on River Miles(rm): (0.0 to 22.8)

View list of tributaries to the Rock Creek and their river miles

Hydrologic Units:

10020004 Big Hole,

Counties:

Beaverhead,

FWP Management

Waterbody Location	Region/Fish District	Management
From (rm 0.0) to (rm 22.8)	3 / Central	Trout Water

Fish Species Present

Species	Abundance	Water Use	Data Quality
Arctic Grayling			
From (rm 0.0) to (rm 22.8)	Rare	Both resident and Fluvial/Adfluvial populations	Extrapolated based on surveys
Brook Trout			
From (rm 0.0) to (rm 2.2)	Abundant	Year-round resident	Extrapolated based on surveys
From (rm 2.2) to (rm 22.8)	Common	Year-round resident	Extrapolated based on surveys
Brown Trout			
From (rm 0.0) to (rm 2.2)	Rare	Year-round resident	Extrapolated based on surveys
Burbot			
From (rm 0.0) to (rm 22.8)	Common	Year-round resident	Extrapolated based on surveys
Longnose Dace			
From (rm 0.0) to (rm 22.8)	Common	Year-round resident	Extrapolated based on surveys
Longnose Sucker			
From (rm 0.0) to (rm 2.2)	Common	Year-round resident	Extrapolated based on surveys
From (rm 2.2) to (rm 12.1)	Rare	Year-round resident	Extrapolated based on surveys
Mottled Sculpin			
From (rm 0.0) to (rm 22.8)	Common	Year-round resident	Extrapolated based on surveys

Arctic Grayling	One pass	3.5-7.4	Medium quality	33	per 1000 ft.
Mountain Whitefish	One pass	6.2-6.2	Medium quality	1	per 1000 ft.

From (rm 15.8) to (rm 15.9) Section Name: 1/2 MI ABOVE FS BOUNDARY

Date: 8/10/1989 Collector: SHEPARD, BRAD

Species	Method	Length-(Min-Max(In))	DQR	Total	Units
Brook Trout	One pass	4.72-7.05	Medium quality	7	no estimate, count or presence only

From (rm 16.9) to (rm 17.0) Section Name: 1 MI ABOVE FS BOUNDARY

Date: 8/15/1989 Collector: SHEPARD, BRAD

Species	Method	Length-(Min-Max(In))	DQR	Total	Units
Brook Trout	Two pass	3.5-8.9	Medium quality	69	per section length

Genetics

Genetic sampling not collected on this stream.

Angling Use - Days Per Year

From (rm 2.2) to (rm 22.8)

	Total			Resident			Non Resident			Ranking	
Year	Press.	s.d.	Trips	Press.	s.d.	Trips	Press.	s.d.	Trips	State	Region
1999	167	167	4	167	167	4	0	0	0	832	181
1993	25	25	1	0	0	0	25	25	1	1749	418
1985	1048	542	5	1013	541	4	35	35	1	290	63
1984	556	478	2	471	471	1	85	85	1	406	80
1983	388	276	5	210	210	1	178	178	4	675	131
1982	812	728	5	722	723	4	90	90	1	398	86

Angling Use Data Source:
Data provided by a biannual Statewide Angling Use Survey conducted via mail by Montana Fish, Wildlife and Parks Information Services Unit in Bozeman.

Fish Stocking Since 1990

Species	Date	# of Fish	Length(in)	Hatchery

Stream Channel Conditions

From (rm 0.0) to (rm 2.2)

Bank Vegetation: N/A
SubSurface Cover: N/A
Sinuosity: 1.6
Data Rating: N/A

Riparian Vegetation: N/A
Gradient: 0.3
Side Channels: Moderate
Rosgen Class: C4-Mod entrenched/slightly confined; fine alluvium w/low flood terraces

Pool Ratio: 35% Run Ratio: 33% Riffle Ratio: 23% Pocket Ratio: 9%

From (rm 2.2) to (rm 22.8)

Bank Vegetation: Deciduous tree forms
SubSurface Cover: Poor
Sinuosity: N/A
Data Rating: Low - judgement only

Riparian Vegetation: Grass/herbaceous forms
Gradient: 0
Side Channels: Nil
Rosgen Class: N/A

Pool Ratio: 28% Run Ratio: 36% Riffle Ratio: 36% Pocket Ratio: 0%