



Final Environmental Impact Statement

Lost Cabin Mine

Brush Creek/Hayden Ranger District

**MEDICINE BOW-ROUTT NATIONAL FORESTS &
THUNDER BASIN NATIONAL GRASSLAND**

Carbon County, Wyoming

Township 14 North, Range 86 West, Sections 1 and 12

United States
Department of
Agriculture

Forest
Service

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**Lost Cabin Mine
Final Environmental Impact Statement
Carbon County, Wyoming**

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Abstract: This Final Environmental Impact Statement (EIS) assesses and discloses the environmental effects of a proposal to improve a historic mining road (Way 4170H) to allow motorized access to the Lost Cabin Mine for mineral exploration¹. The Lost Cabin Mine is located in the Mowry Peak Inventoried Roadless Area (IRA), in Township 14 North, Range 86 West, Sections 1 and 12 in Carbon County, Wyoming. This EIS also discloses the environmental effects of two alternatives to the Proposed Action. The alternatives were designed to address issues raised during the public participation process (Scoping, 40 CFR 1501.7) for this analysis and to help achieve the goals and objectives of the Forest Plan.

The sampling conducted under the Plan of Operations is the first logical step in identifying or locating a possible mineral deposit. Once this sampling has been completed and assay results have been received and evaluated, the claimants/operators will make a decision whether to continue with additional exploration or abandon their efforts. Any additional exploration efforts beyond the scope of the current proposal will require additional analysis and decision under the National Environmental Policy Act.

¹ This EIS discloses the effects of mineral exploration only. If a discovery is made, additional National Environmental Policy Act (NEPA) analysis would be completed.

SUMMARY

The Medicine Bow-Routt National Forests have received a Plan of Operations from Broken Arrow Mining, LLC. Approval of the Plan of Operations, which is identified as Alternative 1 in the Final Environmental Impact Statement (Final EIS), would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine. The Lost Cabin Mine is located in Sections 1 and 12 of T. 14 N., R. 86 W., 6th Principal Meridian, Carbon County, Wyoming (see Final EIS Map 1, page 4). Approval of the Plan of Operations would allow Broken Arrow Mining, LLC to use National Forest System Roads (NFSR) 439, 431, and 431.1A while conducting mineral exploration. In addition, they would be allowed to clear deadfall from and use roughly 0.4 miles of NFSR 4172. Finally, they would be allowed to make minor improvements to and use 1.6 miles of an historic mining road (Way² 4170H) that accesses the mine site. Improvements would include: 1) individual tree removal in isolated locations to improve maneuverability and sight distance; and 2) installation of drainage structures to reduce erosion and sedimentation. The historic road and the Lost Cabin Mine fall within the Mowry Peak Inventoried Roadless Area (IRA) boundary. All NFSRs and Ways are currently closed to motorized vehicle use.

Pick-up trucks and ATVs would be allowed on NFSRs 439, 431, 431.1A, and 4172. ATVs, a D-4 bulldozer, and an 800 or 900 series rubber-tracked bobcat would be allowed on the historic mining road (Way 4170H). ATVs and the bobcat would be allowed at the mining site. The bulldozer would be needed to make minor improvements to Way 4170H so that the mine site could be accessed by the bobcat. The ATVs and the bobcat would be used to access eight separate sites within the Mowry Peak IRA boundary; four existing prospecting pits and four new prospecting pits (see Final EIS Map 3, page 14). All ATV and bobcat trails would be approved by the District Ranger of the Brush Creek/Hayden Ranger District as part of the Plan of Operations. A crusher site and self-contained trailers, for living purposes, would be located at the junction of NFSR 4172 and Way 4170H. This area is an old timber landing that has been previously disturbed.

Exploration activities would involve entering existing shafts at prospecting pits 1 and 2 to repair entrances and to obtain surface and subsurface samples. Tailings from previous mineral exploration would also be sampled. Prospecting pits would be dug at sites 3 and 4 and they, too, would be sampled. In addition to sampling the four existing prospecting sites, prospecting pits would be dug at four other locations to determine their mineral potential. After each pit is explored, it would be reclaimed (i.e., ripped and seeded) before another pit is entered. No sites would be left un-reclaimed at the end of the operating season.

² Ways are routes not currently identified as part of the Forest Transportation System.

The small, rubber-tracked bobcat would be used to obtain the samples at some locations, while hand tools would be used at others. Roughly ten, 50-pound bags of sample rock would be removed from each site. This would result in a total of 80, 50-pound bags removed throughout the duration of the exploratory activities. Each sample site would have ramps at each end and would be 20 feet deep at the center, 30 to 40 feet long, and 30 feet wide, for a total of approximately 889 cubic yards of material removed at each pit. Total surface area disturbance (all pits collectively) is anticipated to be approximately 1/5 of an acre. Samples would be transported via 6-wheel ATVs to the junction of NFSR 4172 and Way 4170H, where a small jaw crusher would be located. As mentioned above, the crusher would be located in a previously disturbed site. The crusher would reduce the sampled material to roughly 3/4 of an inch in size prior to having it assayed.

Broken Arrow Mining, LLC would like to perform exploration at Lost Cabin Mine between June and the end of October for the next five years. Between two and four people would be working the site at any given time for roughly 8 to 10 days per month.

The sampling conducted under this Plan of Operations is the first logical step in identifying or locating a possible mineral deposit. Once this sampling has been completed and assay results have been received and evaluated, the claimants/operators will make a decision whether to continue with additional exploration or abandon their efforts. Any additional exploration efforts beyond the scope of the current proposal will require additional analysis under the National Environmental Policy Act.

Background Information

During March of 2000, the Brush Creek/Hayden District of the Medicine Bow-Routt National Forests received a proposed Plan of Operations for mining work in Sections 1 and 12 of T. 14 N., R. 86 W., 6th Principal Meridian. The proposal included a request for authorization to conduct mineral exploration at the Lost Cabin Mine, to use NFSRs 439, 431, and 431.1A while conducting exploration activities, to clear deadfall from and use roughly 0.4 miles of NFSR 4172, and to improve and use 1.6 miles of an historic mining road (Way 4170H) that accesses the mine site. All roads are currently closed to motorized vehicle use. The historic road and the Lost Cabin Mine fall within the Mowry Peak IRA boundary.

Since March of 2000, and until the environmental analysis process is complete, Broken Arrow Mining, LLC has been authorized to conduct limited mineral exploration activities at the Lost Cabin Mine prospecting pits 1, 2, and 3. All exploration activities have been conducted using hand tools. Pick-up trucks have been authorized on the closed roads via a Road Use Permit. However, to protect the Mowry Peak IRA character, ATVs only have been allowed on Way 4170H.

Since limited exploration activities have been approved since March of 2000, approval of the Plan of Operations would be a continuation of activities and not a new activity. However, approval would allow Broken Arrow Mining, LLC to intensify exploration activities by authorizing the use of a bulldozer to improve Way 4170H and by allowing use of a bobcat for exploration activities at the mine site.

An historical search of Government Land Office plats indicates that a “wood road” accessed the Lost Cabin Mine site as early as 1899 (currently Way 4170H). By 1901, an “improved road” that accessed Vulcan Mountain from Saratoga, Wyoming was in place. This road also provided a direct link with the Southern Wyoming Tramway, which carried mined ore to a smelter in Encampment, Wyoming. It further provided access to other major mining communities in the near vicinity. Although the road is depicted on Forest Service maps until 1956, more recent inventories do not indicate that it is still a part of the Forest Transportation System (FTS).

On January 12, 2001, the Roadless Area Conservation Rule was published in the *Federal Register*. This rule prohibited road construction projects, including temporary road construction/reconstruction projects, within IRA boundaries, except under the limited conditions specified by the rule. One of the conditions specified under the rule was access to mining claims authorized by United States Mining Laws (Act of May 10, 1872; 30 U.S.C. 21 - 54).

During the development of this project, the 2001 Roadless Area Conservation Rule was temporarily enjoined, and the Forest Service operated under Interim Direction for management within IRAs. Interim Directive 1920-2001-1 was issued on December 14, 2001, to provide some stability to the management of IRAs, given the legal uncertainty of implementing the Roadless Rule. A preliminary injunction order was issued in the Idaho Federal District Court on May 10, 2001, enjoining the USDA and the Forest Service from implementing the January 2001 Roadless Rule. This order was appealed to the 9th Circuit Court of Appeals, and a 2 to 1 split decision was issued on December 12, 2002. The decision remanded and reversed the lower court’s order. The 9th Circuit was requested to review the decision by the plaintiffs in the Idaho case and declined to do so on April 4, 2003. On April 14, 2003, a mandate was issued by the 9th Circuit to the Idaho court, reversing and remanding the May 10, 2001 preliminary injunction order. The 1920-2001-1 Interim Direction expired in June 2003.

There continues to be uncertainty with the Roadless issue. During July 2003, US Federal District Court Judge Brimmer of Wyoming issued a permanent injunction against the 2001 Roadless Rule.

Affected Environment

The proposed Lost Cabin Mine project is located in the Sierra Madre Mountain Range, along NFSR 443 and adjacent to Vulcan Mountain. As previously mentioned, the Lost Cabin Mine site is located within the Mowry Peak IRA. The 6th level watersheds of South Spring, Cow Creek, Shingle Creek, East Fork Spring Creek, and Heather Creeks define the analysis area (see Final EIS Map 2, page 5). This analysis area is bounded by the Continental Divide to the west and the Forest boundary to the east. It is located approximately 10 miles west of Encampment, Wyoming.

Purpose and Need for the Action

The purpose for this action is to respond to a proposed Plan of Operations submitted by Broken Arrow Mining, LLC to conduct mineral exploration on their mining claims at the Lost Cabin Mine.

United States Mining Laws grant a statutory right (36 CFR 228.1) to enter upon public lands to search for mineral deposits. It is not the purpose of the analysis to determine management of mineral resources. The responsibility for that determination lies with the Secretary of the Interior.

The need for the action is to determine how the surface use connected with operations authorized by the United States Mining Laws (Act of May 10, 1872; 30 U.S.C. 21 - 54) shall be conducted to minimize adverse environmental impacts on National Forest System surface resources. The action is also needed to determine the mitigation measures needed to protect National Forest resources and improvements from impacts associated with mineral activity. Mitigation measures would be incorporated into the Plan of Operations.

Public Involvement

On January 7, 2002, a scoping letter outlining the Proposed Action was mailed to 122 individuals, agencies, and organizations. To inform the general public of the proposal, a press release was mailed to media contacts in Albany and Carbon Counties, Wyoming, on January 2, 2002. Following these public participation activities, several requests for additional information concerning the proposal were received, and Forest Service policies regarding road construction/re-construction in IRAs changed. Consequently, the Forest Service decided to complete an Environmental Impact Statement (EIS). Following the decision to complete an EIS, a second scoping letter was mailed to the same mailing list on March 20, 2002. A Notice of Intent (NOI) initiating the formal scoping process for the EIS was also published in the *Federal Register* that same day. The NOI asked for public comment on the proposal until April 21, 2002. As a result of both scoping efforts, 40 comment letters were received.

On October 10, 2003, a revised NOI was published in the *Federal Register*. The revised NOI changed the Responsible Official for this project from the Regional Forester of the Rocky Mountain Region to the Forest Supervisor of the Medicine Bow-Routt National Forests. The change in Responsible Official was due to changes in rules and regulations affecting IRAs. Although a revised NOI was published, the administrative scope of the project did not change. Therefore, a new scoping period was not initiated.

On October 16, 2003, a letter notifying the public that the Lost Cabin Mine Draft EIS was available for public comment was mailed to all individuals who had commented during the scoping efforts for this project. On October 24, 2003, a press release notifying the general public of the availability of the Draft EIS was mailed to local media contacts. On October 26, 2003, a legal notice announcing the availability of the Draft EIS was published in the *Laramie Daily Boomerang*. The *Laramie Daily Boomerang* is the paper of record for this project. Finally, on October 31, 2003, a Notice of Availability of the Draft EIS was published in the *Federal Register*. The 45-day public comment period for the Draft EIS began November 1, 2003 and expired December 15, 2003. A total of 21 letters and e-mails were received during the comment period for the Draft EIS.

Issues

Additional issues raised during scoping, including those listed below, are identified and described on pages 8 through 11 of the Final EIS.

1) Significant issues used to develop alternatives to the Proposed Action. These included:

- Providing Reasonable Access to the Proponents
- Minimizing Changes to the Mowry Peak IRA Character
- Wildlife Protection

Alternatives

The issues identified above led the agency to develop alternatives to the Proposed Action. These include:

Alternative 1: Proposed Action: Approve Plan of Operations

Alternative 1 is described on pages v-vi of this Summary.

Alternative 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Like the Proposed Action, the Forest Service would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine, but in a slightly modified manner. Modifications to the Proposed Action are as follows: 1) Broken Arrow Mining, LLC would not be allowed to clear 0.4 miles of NFSR 4172 and use the junction of NFSR 4172 and Way 4170H as a crusher site. Instead, a crusher site, roughly ¼ acre in size, would be cleared approximately 1.16 miles up NFSR 431.1A; 2) The self-contained camper trailers would be located at the cleared area; 3) A D-4 bulldozer would not be allowed to improve Way 4170H; instead the work would have to be done with an 800 or 900 series rubber tracked bobcat; and 4) Exploration activities would be limited to July 1 through October 15 to protect elk calving. All other activities associated with the Proposed Action would remain the same.

Alternative 3: No Action

Under Alternative 3, the Forest Service would not approve the Plan of Operations submitted by Broken Arrow Mining, LLC. As such, the claimants would not be allowed to clear dead fall from and use roughly 0.4 miles of NFSR 4172, nor would they be allowed to repair 1.6 miles of Way 4170H as requested in the Plan of Operations. In addition, they would not be allowed to establish a crusher site or locate self-contained trailers for living purposes at the junction of NFSR 4172 and Way 4170H. Finally, they would not be able to use a small, rubber-tracked bobcat for mineral exploration at the mine site. According to 36 CFR 228.4, however, Broken Arrow Mining, LLC would still be able to conduct prospecting and sampling activities at the Lost Cabin Mine. These activities would be accomplished using hand tools, and access to the site would have to be non-motorized.

Since the No Action alternative would not provide the claimants with “reasonable access” and the ability to conduct exploration activities using mechanized equipment, it would not be consistent with United States Mining Laws (30 U.S.C. 21-54). However, National Environmental Policy Act (NEPA) regulations require the Forest Service to analyze the No Action alternative in detail, and to use it as a baseline for comparing the effects of the other alternatives.

Major Conclusions of the Analysis

Wildlife

- Location of the crusher site, clearing vegetation from NFSR 4172, and improving Way 4170H, as described under the Proposed Action, would cause a slight reduction in wildlife hiding and thermal cover. A slight reduction in old growth would also occur. Effects would be less under Alternative 2, due to a change in the placement of the crusher site. The new location would not require clearing NFSR 4172.
- The Proposed Action and Alternative 2 may affect, but are not likely to adversely affect, Proposed, Threatened, Endangered, or Region 2 Sensitive wildlife species.

Soils

- Under the Proposed Action (Alternative 1), soil would be compacted on NFSR 4172, Way 4170H, the crusher pad, and on ATV and bobcat trails used to access the prospecting pits during the life of the project. Soil compaction would occur to a lesser degree under Alternative 2, since NFSR 4172 would not be re-opened and used.
- The Proposed Action has the potential for short-term, localized sediment movement downslope from clearing NFSR 4172, use of the crusher pad, improving and using Way 4170H, and from use of ATVs and bobcat at the mine site. Effects would be slightly less under Alternative 2, since NFSR 4172 would not be re-opened and used.

Water Quality

- Contamination of localized surface and groundwater quality could occur as a result of mining activities, as described under the Proposed Action and Alternative 2. However, mitigation measures have been designed to prevent the movement of water into and through the mine shafts, pits, and sample rock piles.

Riparian Areas, Wetlands, and Aquatic Habitat

- None of the proposed alternatives would directly affect riparian areas and wetlands, because no activities would occur in these areas and no activities are proposed in critical upslope areas.
- Indirect effects to aquatic habitat and/or populations could occur as a result of chemical or physical water quality degradation from sediment input or from soil and water contamination during mining activities.

Lands and Minerals

- The Proposed Action and Alternative 2 would allow the operators to exercise their rights granted by the United States Mining Laws (30 U.S.C. 21-54). Alternative 3 (No Action) would not.

Recreation

- The Proposed Action and Alternative 2 would have a short-term, direct effect on the Mowry Peak IRA, due to the use of motorized vehicles on Way 4170H and at the mine site. Motorized use would impact the natural integrity, appearance, opportunity for solitude, remoteness, primitive recreation opportunity, and unique features of the area. These effects would end when the mineral operation ends, and the ground disturbance within the IRA is full rehabilitated and completely re-vegetated.
- The Proposed Action and Alternative 2 could cause a slight displacement of dispersed recreation users to other areas, and could cause a slight decline in hunt quality and hunter success rates.

Visuals

- The Proposed Action and Alternative 2 have the potential to reduce the area's high quality scenery.

Heritage

- The Proposed Action and Alternative 2 mitigate adverse effects to the historic mine so that the project will have no adverse effect to cultural resources.

Decision Framework

Given the purpose and need, the environmental effects of the alternatives, and the comments submitted during the public participation process, the Responsible Official will evaluate the results of the analysis and its findings. The decision will include a determination as to where and under what terms and conditions the proponent may access the Lost Cabin Mine, while also protecting the surface natural resources in the area.

Due to the fact that the Plan of Operations proposes road improvements within an Inventoried Roadless Area, the Responsible Official is the Forest Supervisor of the Medicine Bow-Routt National Forests.

Lost Cabin Mine

Table of Contents

<u>Topic</u>	<u>Page</u>
SUMMARY	v
Chapter 1. Purpose of and Need for Action	1
Document Structure	1
Background	2
Purpose of and Need for Action	6
Proposed Action	7
Decision Framework	7
Public Involvement	7
Issues	8
Chapter 2. Alternatives, Including the Proposed Action	12
Alternatives Considered in Detail	12
Mitigation Measures Common to all Action Alternatives	16
Monitoring Requirements Common to all Action Alternatives	17
Alternatives Considered but Eliminated from Detailed Study	18
Comparison of Alternatives	19
Chapter 3. Affected Environment and Environmental Consequences	22
Lands, Minerals and Non-recreation Special Uses	23
Infrastructure	25
Watershed, Soils, Aquatics, and Fisheries	27
Recreation	36
Wildlife	41
Heritage Resources	53
Botany	55
Other Required Disclosures	58
Short-term Uses and Long-term Productivity	58
Unavoidable Adverse Effects	59
Irreversible and Irrecoverable Commitments of Resources	59
Chapter 4. Consultation and Coordination	62
Preparers and Contributors	62
Distribution of the Environmental Impact Statement	63
<u>Maps</u>	
Map 1. Vicinity Map	4
Map 2. Analysis Area Map	5
Map 3. Proposed Action	14
Map 4. Alternative 2	15

Lost Cabin Mine
Table of Contents (Cont'd)

<u>Tables</u>	<u>Page</u>
Table 1. Comparison of Alternatives_____	26
Table 2. Aquatic and Riparian-dependent MIS_____	35
Table 3. Structural Stage Acres by Vegetation Type_____	42
Table 4. Analysis Area Existing Condition Habitat Capability Values_____	43
Table 5. Vegetation Disturbance under Alternatives_____	47
Table 6. Comparison of Existing Condition and Proposed Action Habitat Capability Values for MIS_____	47
Table 7. Summary of Cumulative Harvest Activities_____	49
<u>Appendices</u>	
Appendix 1: Aquatic Biological Evaluation and Assessment_____	70
Appendix 2: Wildlife Biological Evaluation_____	74
Appendix 3: Comment Analysis_____	105

CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

Document Structure

The Forest Service has prepared this Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Final Environmental Impact Statement (Final EIS) discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and the alternatives.

This Final EIS is tiered to the 1985 Medicine Bow Land and Resource Management Plan. It is also tiered to the Final Environmental Impact Statement (FEIS) for the Forest Plan. Tiering means that Forest Plan and Forest Plan FEIS information is incorporated by reference in this document rather than repeated. Tiering is used to reduce paper work as stated in 40 CFR 1500.4 and 40 CFR 1502.20. The Forest Plan and the FEIS are on file at the Medicine Bow-Routt National Forests, 2468 Jackson Street, Laramie, Wyoming. This Final EIS is also tiered to the Forest-wide Roads Analysis Process (RAP) (March 2002) and the RAP prepared for this project. A RAP is an integrated ecological, social, and economic approach to transportation planning that addresses both existing and potential future roads (USFS 1999a).

The document is organized into four chapters:

- *Chapter 1. Purpose of and Need for Action:* The chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Chapter 2. Alternatives, including the Proposed Action:* This chapter provides a more detailed description of the agency's Proposed Action as well as alternative methods for achieving the stated purpose. The alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Chapter 3. Existing Condition and Environmental Consequences:* This chapter describes the environment affected by the proposal and the environmental effects of implementing the Proposed Action and other alternatives. This analysis is organized by resource area (e.g. Lands, Minerals, and Non-recreation Special Uses, Infrastructure, etc.).
- *Chapter 4. Consultation and Coordination:* This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental impact statement.
- *Index:* The index provides page numbers by document topic.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at South Highway 130/230, Saratoga, Wyoming, 82331.

Background

During the fall of 2000, the Brush Creek/Hayden District of the Medicine Bow-Routt National Forests received a proposed Plan of Operations for mining work in Sections 1 and 12 of T. 14 N., R. 86 W., 6th Principal Meridian (see Map 1). The proposal included a request for authorization to conduct mineral exploration at the Lost Cabin Mine, to use NFSRs 439, 431, and 431.1A, while conducting exploration activities, to clear deadfall from and use roughly 0.4 miles of NFSR 4172, and to improve and use 1.6 miles of an historic mining road (Way 4170H) that accesses the mine site. All NFSRs and Ways are currently closed to motorized use.

Since March of 2000, and until the environmental analysis process is complete, Broken Arrow Mining, LLC has been authorized to conduct limited mineral exploration activities at the Lost Cabin Mine prospecting pits 1, 2, and 3. All exploration activities have been conducted using hand tools. Pick-up trucks have been authorized on the closed roads via a Road Use Permit. However, to protect the Mowry Peak IRA character, ATVs only have been allowed on Way 4170H.

Since limited exploration activities have been approved since March of 2000, approval of the Plan of Operations would be a continuation of activities and not a new activity. However, approval would allow Broken Arrow Mining, LLC to intensify exploration activities by authorizing improvement of Way 4170H using a bulldozer and by allowing use of a bobcat for exploration activities at the mine site.

Historical searches of Government Land Office plats indicate that a “wood road” (currently Way 4170H) accessed the mine site as early as 1899. By 1901, an “improved road” that accessed Vulcan Mountain from Saratoga, Wyoming was in place. This road also provided a direct link with the Southern Wyoming Tramway, which carried mined ore to a smelter in Encampment, Wyoming. It further provided access to other major mining communities in the near vicinity. Although the road is depicted on Forest Service maps until 1956, more recent maps do not indicate that it is still a part of the Forest Transportation System

On January 12, 2001, the Roadless Area Conservation Rule was published in the *Federal Register*. This rule prohibited road construction projects, including temporary road construction/reconstruction projects, within Inventoried Roadless Area boundaries, except under the limited conditions specified by the rule. One of the conditions specified under the rule was to allow access to mining claims authorized by the United States Mining Laws (Act of May 10, 1872; 30 U.S.C. 21 - 54).

During the development of this project, the 2001 Roadless Area Conservation Rule was temporarily enjoined, and the Forest Service operated under Interim Direction for management within IRAs. Interim Directive 1920-2001-1 was issued on December 14, 2001 to provide some stability to the management of IRAs, given the legal uncertainty of implementing the Roadless Rule. A preliminary injunction order was issued in the Idaho Federal District Court on May 10, 2001, enjoining the USDA and the Forest Service from implementing the January 2001 Roadless Rule. This order was appealed to the 9th Circuit Court of Appeals, and a 2 to 1 split decision was issued on December 12, 2002. The decision remanded and reversed the lower court’s order. The 9th Circuit was requested to review the decision by the plaintiffs in the Idaho case and declined to do so on April 4, 2003. On April 14, 2003, a mandate was issued by the 9th Circuit to the Idaho court, reversing and remanding the May 10, 2001 preliminary injunction order. The 1920-2001-1 Interim Direction expired in June 2003.

There continues to be uncertainty with the Roadless issue. During July 2003, US Federal District Court Judge Brimmer of Wyoming issued a permanent injunction against the 2001 Roadless Rule.

Affected Environment

The proposed Lost Cabin Mine project area is located in the Sierra Madre Mountain Range, along NFSR 443 and adjacent to Vulcan Mountain (see Map 1). As previously mentioned, the Lost Cabin Mine site is located within the Mowry Peak IRA. The 6th level watersheds of South Spring, Cow Creek, Shingle Creek, East Fork Spring Creek, and Heather Creeks define the analysis area (see Map 2). This analysis area is bounded by the Continental Divide to the west and the Forest boundary to the east. It is located approximately 10 miles west of Encampment, Wyoming.

Information in the Resource Information System (RIS) database indicates that there are 10,348 acres in the analysis area, most of which are National Forest System (NFS) lands. Management emphasis within the area is distributed among several management area prescriptions including: Forest Plan prescription (2A) Roaded Natural Recreation, (3A) Non-Motorized Recreation, (4B) Wildlife Habitat for Management Indicator Species (MIS), (4D) Aspen Management, (7C) Tree Cover for Forested Slopes Greater than 40 Percent, and (7E) Wood Fiber Production and Utilization. The largest management area is 7E, which makes up 43 percent of the area (4,046 acres).

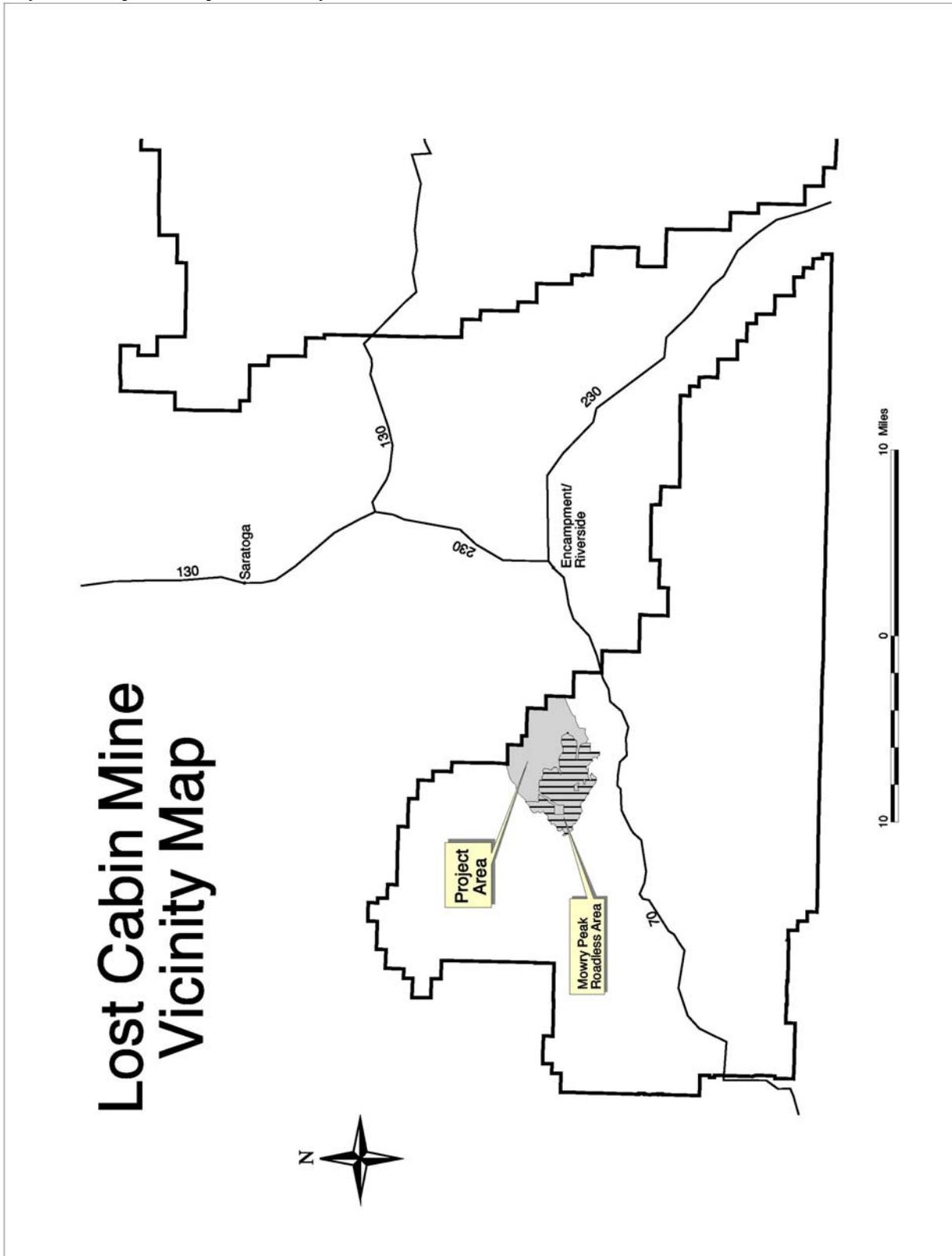
Administrative Scope of the Project

This project was initiated by mining claimants operating under the 1872 Mining Law, as amended. The 1872 Mining Law grants miners certain rights to access and use National Forest System (NFS) lands open to mineral entry. However, mining activities conducted under the 1872 Mining Law are subject to the 1897 Organic Act and its regulations at 36 Code of Federal Regulations (CFR) 228A, which require mining operators to minimize adverse environmental effects on National Forest resources and ensure compliance with applicable environmental laws. These laws include, but are not limited to, the 1972 Clean Water Act, the 1973 Endangered Species Act, and the 1969 National Environmental Policy Act.

Several court decisions (U.S. vs. Good, 2003; U.S. vs. Rizzinelli, 1910) have made it clear that, while the Forest Service can reasonably regulate mining, it cannot prohibit nor unreasonably restrict operations. Therefore, if the environmental analysis shows that Broken Arrow Mining, LLC's proposal can be approved in a manner that would comply with all applicable environmental laws, federal courts have made it clear that Congress has given the Forest Service no authority to prohibit or deny the proposal.

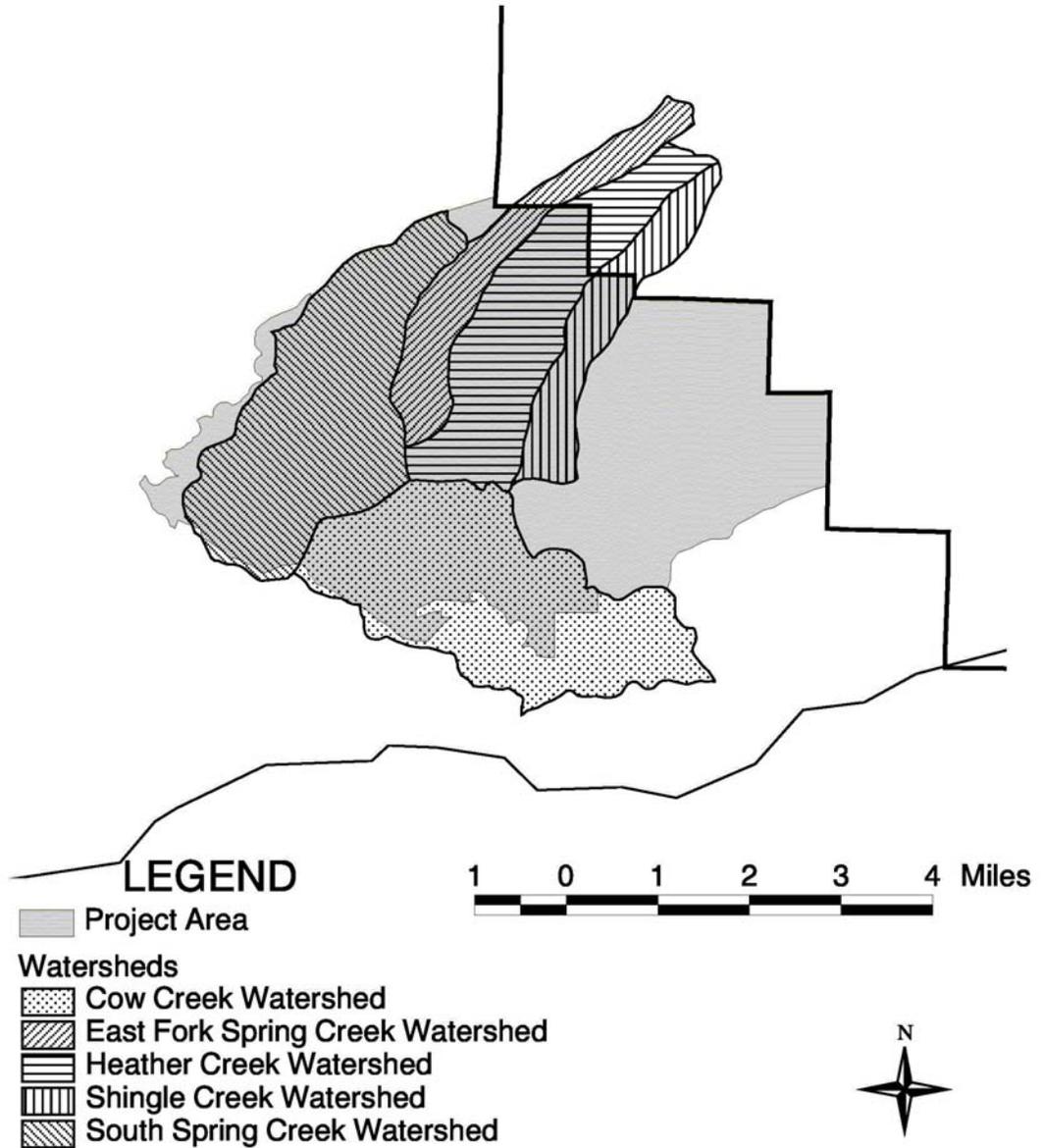
Mining activities described in this Final EIS are also subject to the State of Wyoming storm water discharge permit requirements for construction activities (NPDES permit WYR10-0000). If proposed activities are found to exceed the amount of ground disturbance specified in the Plan of Operations, then an "authorization to discharge storm water associated with large construction activity under the National Pollutant Discharge Elimination System (NPDES)" must be obtained. The District Ranger shall be provided a copy of the permit upon request. Failure to comply with this requirement shall be cause for a notice of non-compliance to be issued to the claimants. The project proponent must also comply with the State of Wyoming Environmental Protection Performance Standards for Non Coal Mines (WYDEQ 2000).

Map 1. Vicinity and Project Area Map.



Map 2. Analysis Area.

Lost Cabin Mine Watershed Analysis Area



Purpose and Need for Action

The purpose for this action is to respond to a proposed Plan of Operations submitted by Broken Arrow Mining, LLC to conduct mineral exploration³ on their mining claims at the Lost Cabin Mine.

The need for the action is to determine how the surface use connected with operations authorized by the United States Mining Laws (Act of May 10, 1872; 30 U.S.C. 21 - 54) shall be conducted to minimize adverse environmental impacts on National Forest System surface resources. The action is also needed to determine the mitigation measures needed to protect National Forest resources and improvements from impacts associated with mineral activity. The mitigation measures will be incorporated into the Plan of Operations.

United States Mining Laws grant a statutory right to enter upon public lands to search for mineral deposits. It is not the purpose of the analysis to determine management of mineral resources. The responsibility for that determination lies with the Secretary of the Interior.

This action responds to the goals and objectives outlined on pages III-3 and III-4 of the Medicine Bow Land and Resource Management Plan (Forest Plan 1985), and helps move the project area towards desired conditions described in that plan. Applicable goals include:

- Accommodate and facilitate the exploration, development, and production of mineral resources in a manner which adequately protects other resources and the environment.
- Permit occupancy and use of National Forest System land only upon compliance with conditions for the protection and administration of the National Forest System lands and resources; for the promotion of public health, welfare, safety or convenience; or when public needs cannot be met on private lands.

³ Mineral exploration is the second stage (after prospecting) in the logical progression of mining activities. It usually occurs once a geologically favorable target area, i.e., with moderate to high mineral potential, has been identified through prospecting, but subsurface information is needed to determine the presence and extent of any mineral resources and whether any of this constitutes economic reserves. In other words, it is still speculative during this stage whether the exploration will result in the discovery of a valuable mineral deposit that can be mined at a profit or if abandonment of the exploration efforts is more prudent.

Alternative 1 - Proposed Action: Approve Plan of Operations

The action proposed by the Forest Service is to approve the Plan of Operations submitted by Broken Arrow Mining, LLC. Approval of the Plan of Operations would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine. It would also allow Broken Arrow Mining, LLC to use National Forest System Roads (NFSR) 439, 431, and 431.1A while conducting mineral exploration. In addition, they would be allowed to clear deadfall from and use roughly 0.4 miles of NFSR 4172. Finally, they would be allowed to improve and use 1.6 miles of an historic mining road (Way 4170H) that accesses the mine site. Improvements would include: 1) individual tree removal in isolated locations to improve maneuverability and sight distance; and 2) installation of drainage structures to reduce erosion and sedimentation. The historic road falls within the Mowry Peak IRA boundary. All NFSRs and Ways are currently closed to motorized vehicle use. A more detailed description of Alternative 1 is located in Chapter 2 of this Final EIS.

Decision Framework

The Responsible Official will examine the purpose and need, the environmental effects of the alternatives, and the comments submitted during the public participation process when evaluating the results of the analysis and its findings. This information will be used to make a determination regarding whether or not any changes or modifications are needed prior to approving the proposed Plan of Operations, and what type of mitigation measures, if any, are needed.

The mining claim is located within an Inventoried Roadless Area; therefore, the Responsible Official is the Forest Supervisor of the Medicine Bow-Routt National Forests.

Public Involvement

On January 7, 2002, a scoping letter outlining the Proposed Action was mailed to 122 individuals, agencies, and organizations. To inform the general public of the proposal, a press release was mailed to media contacts in Albany and Carbon Counties, Wyoming on January 2, 2002. Following these public participation activities, several requests for additional information concerning the proposal were received, and Forest Service policies regarding road construction/re-construction in IRAs changed. Consequently, the Forest Service decided to complete an Environmental Impact Statement (EIS). Following the decision to complete an EIS, a second scoping letter was mailed to the same mailing list on March 20, 2002. A Notice of Intent (NOI) initiating the formal scoping process for the EIS was also published in the *Federal Register* that same day. The NOI asked for public comment on the proposal until April 21, 2002. As a result of both scoping efforts, 40 comment letters were received. The proposal was listed in the Schedule of Proposed Actions (SOPA) quarterly reports starting October 10, 2000 and every subsequent quarterly report.

On October 10, 2003, a revised NOI was published in the *Federal Register*. The revised NOI changed the Responsible Official for this project from the Regional Forester of the Rocky Mountain Region to the Forest Supervisor of the Medicine Bow-Routt National Forests. The change in Responsible Official was due to changes in rules and regulations affecting IRAs. Although a revised NOI was published, the administrative scope of the project did not change. Therefore, a new scoping period was not initiated.

On October 16, 2003, a letter notifying the public that the Lost Cabin Mine Draft EIS was available for public comment was mailed to all individuals who had commented during the scoping efforts for this project. On October 24, 2003, a press release notifying the general public of the availability of the Draft EIS was mailed to local media contacts. On October 26, 2003, a legal notice announcing the availability of the Draft EIS was published in the *Laramie Daily Boomerang*. The *Laramie Daily Boomerang* is the paper of record for this project. Finally, on October 31, 2003, a Notice of Availability of the Draft EIS was published in the *Federal Register*. The 45-day public comment period for the Draft EIS began November 1, 2003 and expired December 15, 2003. A total of 21 letters and e-mails were received during the comment period for the Draft EIS.

Issues

The Forest Service separated the issues into three groups: 1) Significant issues used to develop alternatives to the Proposed Action; 2) Issues Incorporated into Alternative Design; and 3) Issues Beyond the Scope of the Analysis. A variety of factors, including geographic extent, duration of effects, and intensity of public interest or resource conflict were used to determine **significant issues**. **Issues incorporated into alternative design** are those that are either addressed by management requirements and/or they did not suggest a need for additional alternatives. Nonetheless, they are still considered important in the decision maker's choice between the alternatives. **Issues beyond the scope of this analysis** were identified as those: 1) outside the scope of the Proposed Action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7(a)(3), "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)..."

1) SIGNIFICANT ISSUES USED TO DEVELOP ALTERNATIVES TO THE PROPOSED ACTION:

1. Providing Reasonable Access to the Proponents: The Forest Service must determine the type of access that should be granted to Broken Arrow Mining, LLC. As stated previously, U.S. Mining Laws (Act of May 10, 1872; 30 U.S.C. 21 – 54) grant a statutory right to enter upon public lands to search for mineral deposits. Prohibiting the use of motorized equipment would not allow exploratory activities to occur as proposed.

Indicators⁴ include:

- Distance allowed with motorized vehicles on existing roads within the Mowry Peak IRA boundary.

Alternative 1 (Proposed Action) and Alternative 2 address this issue.

⁴ Indicators are measurements designed to determine the effects of the proposed activities.

2. Minimize Changes to the Mowry Peak IRA Character: Allowing use of motorized equipment for mineral exploration in the Mowry Peak IRA could result in adverse changes to the areas' roadless area character.

Indicators include:

- Width of road prism in the Mowry Peak IRA boundary.
- Miles of ATV trails in the Mowry Peak IRA.

Alternative 3 (No Action) and Alternative 2, to a lesser degree, address this issue.

3. Wildlife Protection: Elk could be displaced as a result of using the junction of NFSR 4172 and Way 4170 for a crusher site and clearing vegetation from NFSR 4172. NFSR 4172 has been decommissioned and there is good regeneration that provides hiding cover along the road. Length of the operating season could also cause security problems for elk. Finally, impacts to Proposed, Endangered, Threatened, or Region 2 Sensitive Species (PETS) could occur as a result of mining activities.

Indicators include:

- Vegetation clearing on NFSR 4172.
- Placement of the crusher site.
- Length of operating season.
- Impacts to Proposed, Endangered, Threatened, or Region 2 Sensitive Species.

Alternative 3 (No Action) and Alternative 2, to a lesser degree, address this issue.

2) ISSUES INCORPORATED INTO ALTERNATIVE DESIGN:

4. Recreational Use of the Area: Allowing motorized use within the Mowry Peak IRA Area could change the character of the IRA and could displace dispersed recreation users due to mining activities and the road improvement work. Duration and timing of the activity could also cause behavioral changes in big game herds that could affect hunt quality and hunter success rates.

Indicators include:

- Changes to the Mowry Peak IRA character.
- Number of visitor days affected.
- Estimated decline in hunt quality and hunter success rates.

5. Protection of Water Resources: Oxidation of sulfidic minerals may acidify surface and groundwater. This could create acid mine drainage that could release heavy metals and degrade water quality and aquatic ecosystems. Runoff from piles of backfill could potentially degrade water quality depending upon the type of minerals present in the backfill.

Indicators include:

- Water quality.

6. Soil Erosion and Compaction: Proposed ground disturbing activities, such as improving Way 4170H, ATV/bobcat trails, establishing a crusher pad, backfill piles, and digging discovery pits have the potential to cause erosion and deliver sediment to streams. These activities also have the potential to compact the soil and alter soil productivity.

Indicators include:

- Soil compaction.
- Soil productivity.
- Erosion and sedimentation.

7. Wetlands, Riparian, and Aquatic Habitat: Repeated access to the mine, in addition to mining activities, has the potential to adversely affect amphibian habitat or populations, due to potential chemical degradation of water quality and/or sedimentation effects to riparian and aquatic habitat.

Indicators include:

- Wetlands, Riparian, and Aquatic Habitat Condition.

8. Protecting the Historic Value of the Lost Cabin Mine: Currently, there is an historic cabin at the site, an old mining shaft, and ancillary structures. The historic cabin appears as though it has been used as a shelter and storage area for supplies in the past.

Indicators include:

- Cabin use.

3) ISSUES BEYOND THE SCOPE OF THIS ANALYSIS:

Operators should be responsible for all costs of their operation: Requiring claimants to incur all costs of their operation is a standard operating procedure and would be a requirement of the Plan of Operations that could be approved.

Require a Reclamation Bond: A reclamation bond is a standard operating procedure and would be a requirement of the approved Operating Plan.

Mowry Peak IRA has been incorrectly classified: Inventories of IRAs are completed during the development or revision of Forest Plans. Since these inventories are completed at the Forest Plan level rather than the project level, this issue is beyond the scope of this analysis.

The area should be designated as Wilderness: Forest Plans make recommendations concerning which areas should be recommended for Wilderness designation. Wilderness designations are then made at the Congressional level, not at the project level.

The general public should be allowed motorized access: The roads identified in this document were closed to public use for the protection of wildlife.

Illegal all terrain vehicle (ATV) use: All roads behind the gate on NFSR 439 will remain closed during and after mineral exploration. Consequently, illegal ATV use is not expected to increase.

Economics: The purpose of this action is to help determine the mineral values as provided under the 1872 Mining Law. Further, Broken Arrow Mining, LLC has a statutory right to explore for and develop minerals. In the case of mineral development projects, the burden of economic feasibility resides with the proponent. For mineral exploration and development proposals, the Forest Service will make a determination as to whether the proposed activity constitutes the “next logical step” in the exploration, development, and production progression. In the case of the proposed project, past mining has demonstrated mineral values, and professional geologists have confirmed that there is a reasonable possibility for finding additional ore grade material. Therefore, the Forest Service is satisfied that the Proposed Action fits as the “next logical step.” The economics of the mining operation rests with Broken Arrow Mining, LLC

CHAPTER 2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Introduction

This Chapter describes and compares the alternatives considered for the Lost Cabin Mine project. It includes a description and map of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative (i.e., location of a crusher site) and some of the information is based upon the environmental, social, and economic effects of implementing each alternative (i.e., the amount of erosion caused by motorized versus foot traffic).

Alternatives Considered in Detail

The Forest Service developed three alternatives, including the No Action and Proposed Action alternatives, in response to issues raised by the public.

ALTERNATIVE 1: Proposed Action: Approve Plan of Operations

Under Alternative 1, the Forest Service would approve the Plan of Operations submitted by Broken Arrow Mining, LLC. Approval of the Plan of Operations, would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine. The Lost Cabin Mine is located in Sections 1 and 12 of T. 14 N., R. 86 W., 6th Principal Meridian, Carbon County, Wyoming (see Map 3). Approval of the Plan of Operations would also allow Broken Arrow Mining, LLC to use National Forest System Roads (NFSR) 439, 431, and 431.1A while conducting mineral exploration. In addition, they would be allowed to clear deadfall from and use roughly 0.4 miles of NFSR 4172. Finally, they would be allowed to improve and use 1.6 miles of an historic mining road (Way 4170H) that accesses the mine site. Improvements would include: 1) individual tree removal in isolated locations to improve maneuverability and sight distance; and 2) installation of drainage structures to reduce erosion and sedimentation. The historic road falls within the Mowry Peak IRA boundary. All NFSRs and Ways are currently closed to motorized vehicle use.

Pick-up trucks and ATVs would be allowed on NFSRs 439, 431, 431.1A, and 4172. ATVs, a D-4 bulldozer, and an 800 or 900 series rubber-tracked bobcat would be allowed on Way 4170H. ATVs and the bobcat would be allowed at the mine site. The bulldozer would be needed to make minor improvements to Way 4170H so that the mine site could be accessed by the bobcat. The ATVs and the bobcat would be used to access eight separate sites within the Mowry Peak IRA boundary; four existing prospecting pits and four new prospecting pits. All ATV and bobcat trails would be approved by the District Ranger of the Brush Creek/Hayden Ranger District as part of the Plan of Operations. A crusher site and self-contained trailers, for living purposes, would be located at the junction of NFSR 4172 and Way 4170H. This area is an old timber landing that has been previously disturbed.

Exploration activities would involve entering existing shafts at prospecting pits 1 and 2 to repair entrances and to obtain surface and subsurface samples. Tailings from previous mineral exploration would also be sampled. Prospecting pits would be dug at sites 3 and 4 and they, too, would be sampled. In addition to sampling the four existing prospecting sites, prospecting pits would be dug at four other locations to determine their mineral potential. After each pit is explored, it would be reclaimed (i.e., ripped and seeded) before another pit is entered. No sites would be left un-reclaimed at the end of the operating season.

The small, rubber-tracked bobcat would be used to obtain the samples at some locations while hand tools would be used at others. Roughly ten 50-pound bags of sample rock would be removed from each site. This would result in a total of 80 50-pound bags removed throughout the duration of the exploratory activities. Each sample site would have ramps at each end and would be 20 feet deep at the center, 30 to 40 feet long, and 30 feet wide, for a total of approximately 889 cubic yards of material removed at each pit. Total surface area disturbance (all pits collectively) is anticipated to be approximately 1/5 of an acre. Samples would be transported via 6-wheel ATVs to the junction of NFSR 4172 and Way 4170H, where a small jaw crusher would be located. As mentioned above, the crusher would be located in a previously disturbed site. The crusher would reduce the sampled material to roughly $\frac{3}{4}$ of an inch in size prior to having it assayed.

Broken Arrow Mining, LLC would like to perform exploration at Lost Cabin Mine between June and the end of October for the next five years. Between two and four people would be working the site at any given time for roughly 8 to 10 days per month.

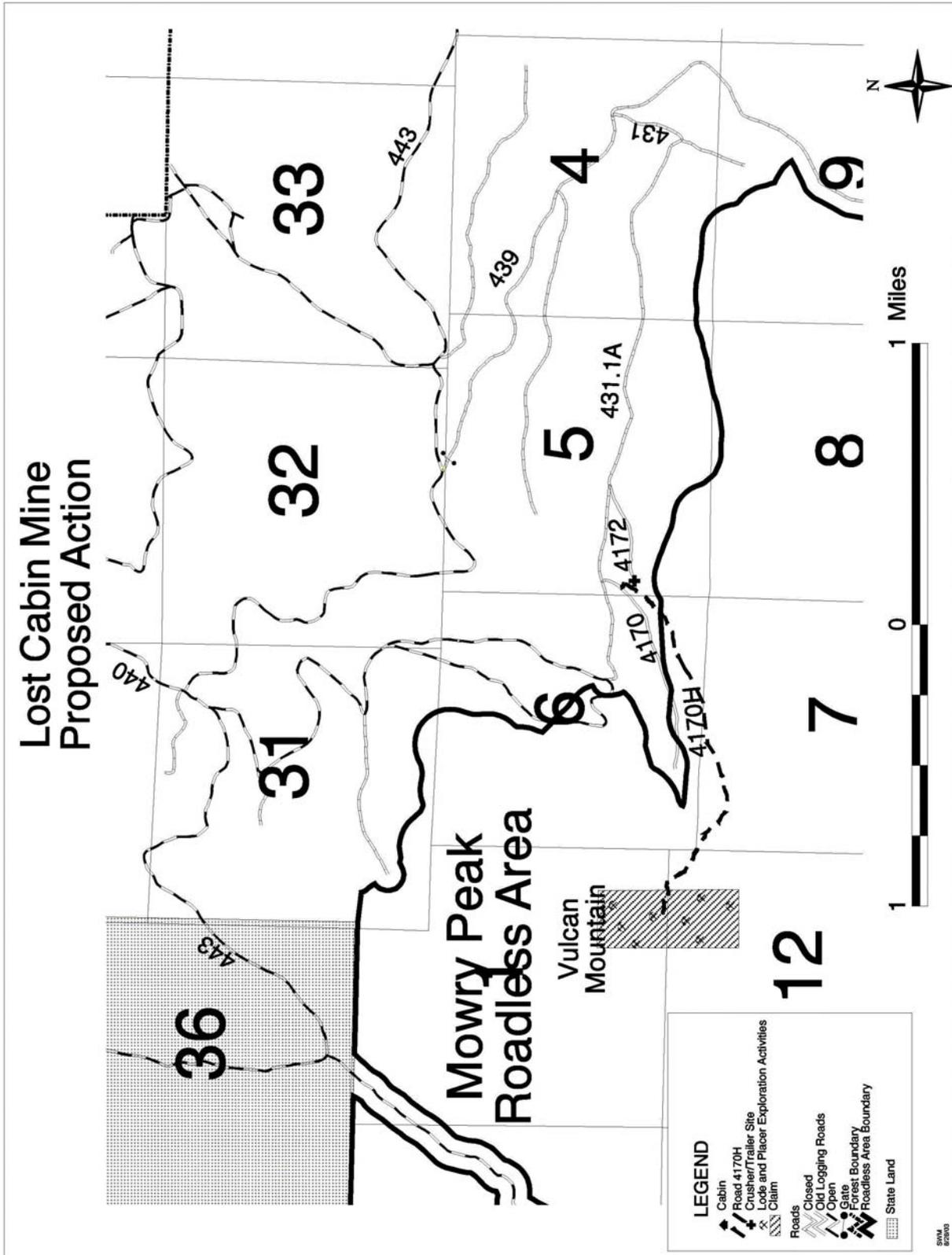
ALTERNATIVE 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Like the Proposed Action, the Forest Service would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine, but in a slightly modified manner (see Map 3). Modifications to the Proposed Action are as follows: 1) Broken Arrow Mining, LLC would not be allowed to clear 0.4 miles of NFSR 4172 and use the junction of NFSRs 4172 and 4170H as a crusher site. Instead, a crusher site, $\frac{1}{4}$ acre in size, would be cleared approximately 1.16 miles up NFSR 431.1A (see Map 4); 2) The self-contained camper trailers would be located at the cleared area; 3) Only a bobcat of a size specified by the Forest Service would be allowed at the mine site and to improve Way 4170H; and 4) Exploration activities would be limited to July 1 through October 15 to protect elk calving. All other activities associated with the Proposed Action would remain the same.

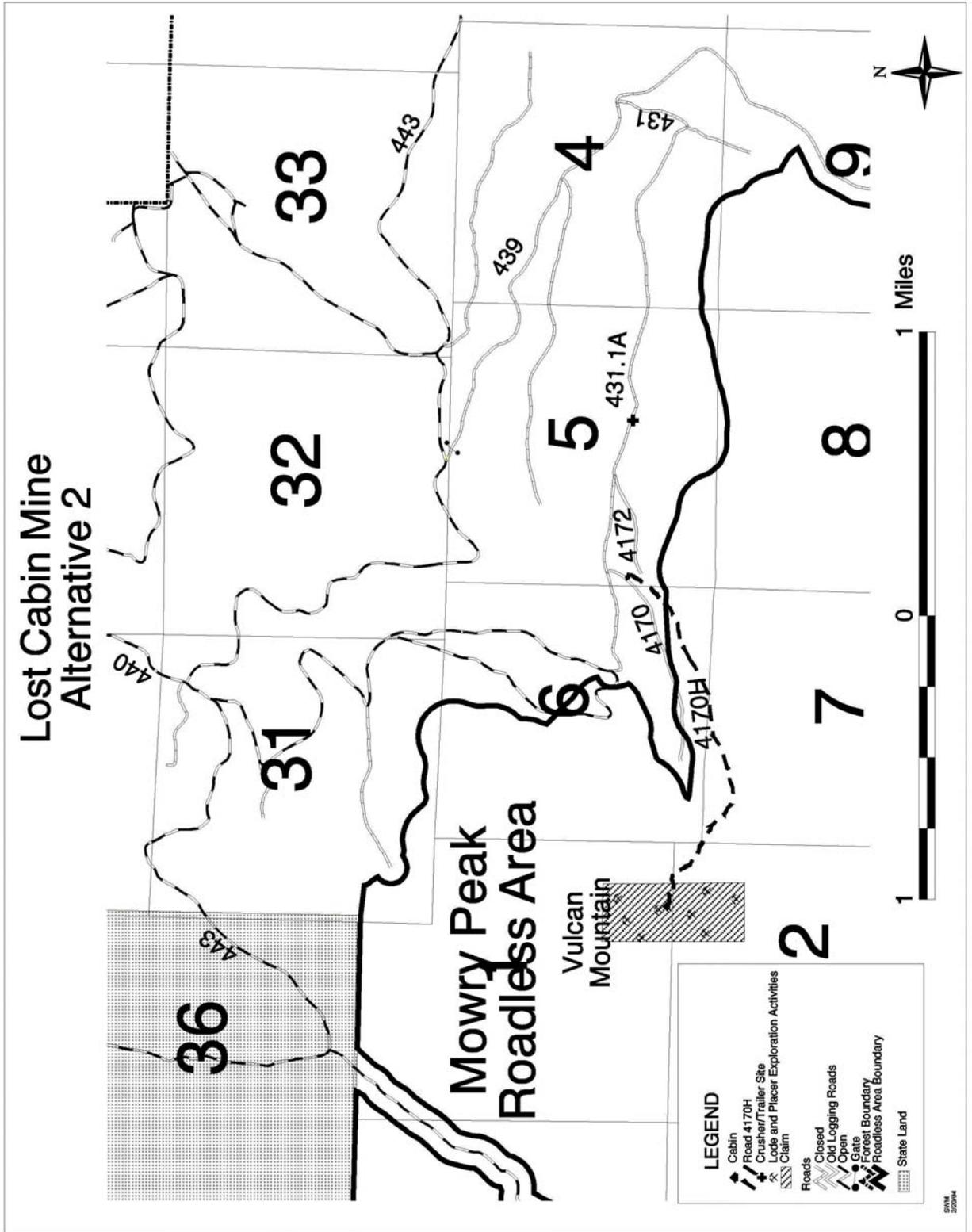
ALTERNATIVE 3: No Action

Under Alternative 3, the Forest Service would not approve the Plan of Operations submitted by Broken Arrow Mining, LLC. As such, the claimants would not be allowed to clear dead fall from and use roughly 0.4 miles of NFSR 4172, nor would they be allowed to repair 1.6 miles of Way 4170H as requested in the Plan of Operations. They would not be allowed to establish a crusher site or locate self-contained trailers for living purposes at the junction of NFSR 4172 and Way 4170H. Finally, they would not be able to use a small, rubber-tracked bobcat for mineral exploration at the mine site. According to 36 CFR 228.4, however, Broken Arrow Mining, LLC would still be able to conduct prospecting and sampling activities at the Lost Cabin Mine. These activities would be accomplished using hand tools, and access to the site would be non-motorized.

Map 3. Proposed Action: Approve Plan of Operations



Map 4. Alternative 2: Modified Plan of Operations (Forest Service Preferred Alternative)



Since the No Action alternative would not provide the claimants with “reasonable access” to the mine site to conduct exploration activities using mechanized equipment, it would not be consistent with United States Mining Laws (30 U.S.C. 21-54). However, National Environmental Policy Act (NEPA) regulations require the Forest Service to analyze the No Action alternative in detail, and to use it as a baseline for comparing the effects of the other alternatives.

Mitigation Measures Common to All Action Alternatives (Alternatives 1 and 2)

The following mitigation measures have been developed specifically for this project. They were developed following a site-specific review of the project area by the ID Team. They are appropriate for any action alternative, and are recommended for inclusion in the selected alternative to protect resource conditions

- All vehicles and equipment must be pressure washed before coming onto the Forest each time to prevent noxious weed infestations.
- Prior to exploration activities starting, the logs around the main shaft will be mapped, photographed, and removed for safekeeping. Following the activities, the logs will be replaced as close to the original position as possible. It is the Authorizing Officer’s decision that no use or alteration of the cabin will be allowed.
- Employ clean camping methods and food storage due to potential bear activity in upper South Heather Creek.
- No motorized access will be allowed for hunting behind the gated road system (NFSR 439).

The Watershed Conservation Practices (WCP) Handbook (FSH 2509.25) contains proven practices to protect soil, aquatic, and riparian systems. If used properly, they meet or exceed State Best Management Practices and so meet Wyoming State Water Quality Standards. The site-specific mitigation measures listed below incorporate the applicable Best Management Practices (BMPs) from the WCP for this project.

- Pumping of groundwater out of excavations, pits, or shafts would be allowed under this project only if a discharge permit from the State is obtained by the proponent and a copy is furnished to the Forest Service.
- Divert surface water around the crusher area and piles of sample rock. Sample rock piles will be covered with plastic when the crusher is not active to prevent runoff from the crushed rock. All crushed materials will be removed from the Forest at the end of the operating season. Sample rock and crusher shall be located on suitable liner.
- All disturbed sites will be reshaped and revegetated following the Authorized Officer’s specifications.
- Divert surface runoff around the shafts, adits, and discovery pits. This can be done by constructing a small berm (6 to 12 inches high) on the upslope side of the excavation. Methods used to divert surface water must be approved by the Brush Creek/Hayden District Ranger as part of the Plan of Operations.

- The project proponent shall comply with the State of Wyoming storm water discharge permit requirements for construction activities (NPDES permit WYR10-0000) prior to starting work. If the Proposed Action exceeds amount of ground disturbance specified in the permit, then an “authorization to discharge storm water associated with small construction activity under the National Pollutant Discharge Elimination System (NPDES)” must be obtained. The Authorized Officer shall be provided a copy of the permit upon request. Failure to comply with this requirement shall be cause for a notice of non-compliance to be issued.
- All ATV/backhoe routes will be staked or flagged and will be the only authorized travel routes at the claim location. Trails with steeper slopes will have dips installed as specified by the Authorized Officer. At the end of this project, the trails will be reclaimed as specified by the Authorized Officer.
- No operations will be conducted during periods of wet weather or wet ground conditions when rutting may result. Surface ruts deeper than 3 inches and longer than 50 feet will be cause for the operations to be suspended.
- Refueling of any equipment (ATVs, crusher, etc) will occur in areas more than 300 feet from wetlands, stream channels and/or riparian areas, and comply with State laws.
- Locate crusher site more than 300 feet from any swale, drainage, stream channel, wetland, or riparian area.
- The project proponent shall immediately clean up all diesel, hydraulic fluids or other contaminant spills, including the contaminated soils. All spill-related material shall be hauled to a Wyoming Department of Environmental Quality (DEQ) approved disposal site. The District Ranger shall be notified in writing of all spills within 3 days from when the spill is discovered.

Monitoring Requirements Common to All Action Alternatives (Alternatives 1 and 2)

The following monitoring is recommended for inclusion in the selected alternative. Monitoring activities would be completed by Forest Service employees.

- The mitigation measures as outlined above will be monitored for implementation and effectiveness by the Forest Service. If monitoring reveals unexpected effects, additional monitoring for potential impacts to stream water quality and amphibian habitat may be initiated, and steps may be proposed to reduce detrimental effects.
- Monitor proposed use areas that occur in the vegetation/elevation range preferred by nesting northern goshawks during activities for new nesting activity.

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the analysis, similar to the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered, but dismissed from detailed consideration for reasons summarized below.

ALTERNATIVE 4: Continue with Current Management

Under Alternative 4, Broken Arrow Mining, LLC would be able to continue mineral exploration using hand tools at prospecting pits 1, 2, and 3. Pick-up trucks would continue to be allowed behind the closed gate on NFSRs 439, 431, and 431.1A, and limited use of ATVs would continue to be allowed on Way 4170H. Use of motorized vehicles would be authorized under a Road Use Permit. Authorization of motorized vehicle use would be evaluated on an annual basis.

This alternative was eliminated from detailed study because it would not provide the claimants with “reasonable access” and the ability to conduct exploration activities using mechanized equipment. Therefore, it would not be consistent with United States Mining Laws (30 U.S.C. 21-54).

ALTERNATIVE 5: Motorized Access to the Mowry Peak IRA Boundary

Under Alternative 4, the Forest Service would allow Broken Arrow Mining, LLC to use NFSRs 439, 431, 431.1A while conducting exploration activities. In addition, they would be allowed to use Way 4170 and to clear dead fall from and use roughly 0.4 miles of NFSR 4172. They would not, however, be allowed to improve and use 1.6 miles of Way 4170H that accesses the mine site with motorized vehicles, nor would they be allowed use ATVs to access four existing prospecting pits. Further, the small, rubber-tracked bobcat would not be allowed within the Mowry Peak IRA boundary to obtain mineral samples. This would preclude motorized activity from occurring in the IRA. Pick-up trucks and ATVs would be allowed on NFSRs 439, 431, 431.1A, and 4172. Exploration activities would be limited to use of hand tools. Self-contained trailers, for living purposes, would be allowed at the lower junction of Way 4170H and NFSR 4172; however, a crusher site would not be allowed. Between two and four people would be working the site at any given time between June and the end of October over the next five years.

This alternative would not be consistent with United States Mining Laws (30 U.S.C. 21-54) because it would unreasonably restrict mining operations and would not allow the operators to exercise their rights granted under the U.S. Mining Laws, as amended. This alternative was eliminated from detailed study due to its similarity with Alternative 3 (No Action).

ALTERNATIVE 6: No Motorized Access from the Closed Gate to the Lost Cabin Mine

Under this alternative, Broken Arrow Mining, LLC would not be allowed motorized access behind the gate on NFSR 439. Aside from the location where motorized access would be denied, all other aspects of Alternative 4 would be the same.

This alternative was eliminated from detailed study because of its similarity to the No Action alternative. Since no motorized access would be allowed, Broken Arrow Mining, LLC would not be able to conduct the type of exploration activities requested. Without the use of ATVs to at least the Mowry Peak IRA boundary, Broken Arrow Mining, LLC would likely not even be able to access the mine site to conduct prospecting activities.

ALTERNATIVE 7: Use Helicopters to Haul Equipment

Under Alternative 7, the Forest Service would approve a modified version of the Plan of Operations, allowing Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine. Unlike the Proposed Action, Broken Arrow Mining, LLC would not be allowed to repair 1.6 miles of Way 4170H. Instead, they would be required to use a helicopter to haul equipment needed for mineral exploration. Like the Proposed Action, however, they would still be allowed to use NFSRs 439, 431, and 431.1A while conducting exploration activities, and to clear dead fall from and use roughly 0.4 miles of NFSR 4172. They would also be allowed to use ATVs on the historic road to access the mine site. All of these roads are closed to motorized vehicles. All other activities associated with the Proposed Action would be approved.

This alternative received some preliminary analysis but was ultimately rejected from detailed analysis because the road system already in existence was specifically designed and constructed to provide access to the area for this specific purpose. With minor maintenance requirements, it is currently capable of handling the anticipated traffic. It provides an efficient and feasible infrastructure designed specifically for this type of use. Requiring the use of helicopters where roads capable of the intended use already exist is not consistent with the 1872 Mining Law requirement to provide access sufficient for the reasonable use of the claim site while minimizing impacts to NFS lands. It would not be reasonable to deny use of an existing transportation system specifically designed and constructed for this area and the planned type of use. Further, use of a helicopter would be an economic hardship on the operator.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Alternative 1: Proposed Action: Approve Plan of Operations

Alternative 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Alternative 3: No Action

Table 1. Comparison of Alternatives

Significant Issue	Alternative 1	Alternative 2	Alternative 3
1. Providing Reasonable Access to the Proponents			
Distance allowed with motorized vehicles on existing roads beyond the Roadless Area boundary	1.6 miles	1.6 miles	0 miles
2. Minimize Changes to Mowry Peak IRA Character			
Width of road prism in the Roadless Area	12 feet	8 feet	7 feet (existing width)
Miles of ATV trails in the Roadless Area	0.7 miles	0.7 miles	0 miles
3. Wildlife Protection			
Vegetation clearing on NFSR 4172	Yes	No	No
Placement of crusher site	Junction of NFSRs 4172 and 431.1A	Approximately 1.16 miles up NFSR 431.1A	None
Length of Operating Season	June 1 to October 31	July 1 to October 15	None
Impacts to proposed, endangered, threatened and sensitive species (PETS)	May affect, not likely to adversely affect	May affect, not likely to adversely affect	No effect
Issues Incorporated into Alternative Design	Alternative 1	Alternative 2	Alternative 3
4. Recreational Use of the Area			
Changes to the Mowry Peak IRA character	Short-term direct effect to the area's natural integrity, appearance, opportunity for solitude, remoteness, primitive recreation opportunity, and unique features	Same as Alternative 1	No change
5. Protection of Water Resources			
Water quality	Low risk of water quality contamination	Low risk of water quality contamination	Very low risk of water quality contamination

6. Soil Erosion and Compaction			
Soil compaction	3.8 acres	2.0 acres	0.3 acres
Soil productivity	Impaired productivity in compacted areas and around crusher site	Impaired productivity in compacted areas and around crusher site	Impaired productivity in areas already compacted
Erosion and sedimentation	Increase in sediment for first year, then decrease over existing levels as areas settle and re-vegetate	Same as Alt. 1	Gradual increase in sediment over time
7. Riparian Areas, Wetlands, and Aquatic Habitat			
Wetlands, riparian, and aquatic habitat	Slight increase in fine sediments in South Heather Creek	Slight increase first year, overall decrease in fine sediments over long term	Aquatic habitat may degrade over time due to fine sediments
8. Protecting the Historic Value of the Lost Cabin Mine			
Cabin protection	Use of cabin not authorized	Use of cabin not authorized	Use of cabin not authorized

CHAPTER 3. EXISTING CONDITION AND ENVIRONMENTAL CONSEQUENCES

This Chapter summarizes the physical, biological, social, and economic environments of the project area and the effects of implementing each alternative on that environment. It also presents the scientific and analytical basis for the comparison of alternatives presented in Chapter 2.

Existing Condition

Existing Condition information provides details about the various resources and uses within the Lost Cabin Mine Analysis Area. Resource descriptions include the existing condition of the environment and the effects of past, known management activities.

Environmental Consequences

Environmental Consequences information describes the consequences, or environmental effects, of implementing the alternatives. The alternatives were designed to address one or more of the issues outlined in Chapter 1 of this Final EIS. Direct, indirect, and cumulative impacts are described for each alternative. The issues from Final EIS Chapter 1, particularly the indicators used to measure the effects of the issues, were used to focus the analysis.

Definitions:

Direct Effects are caused by the action and occur at the same time and place.

Indirect Effects are caused by the action and occur later in time and farther removed in distance.

Cumulative Effects are impacts on the environment that result from increased impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions.

Past, present, reasonably foreseeable future actions analyzed in this Final EIS include:

Since 1956, timber harvest activities and road construction have occurred within the Lost Cabin Mine project area. Timber sales included South Spring Creek, Vulcan Mountain, Cow Creek, and Teddy Creek. Table 7 (page 49) depicts acres treated by these sales. Roads constructed in conjunction with timber harvest activity greatly changed access to the area, particularly with the construction of the Jerry Accord Road (NFSR 443) around 1978. This road was connected to the Battle Highway in the 1980s, which increased motorized access to the area. While all of the temporary roads associated with these timber sales were gated after sale activities were completed, the roads are still available for foot and horse traffic and bicycle use.

Big game hunting is a popular activity in the area; however, there is less activity here than in other areas around the forest. Predominant use is by day hunters, although a few hunting camps are established during the season.

Cattle have and continue to graze in the headwaters of South Heather Creek. This activity has impacted the stream channel and riparian areas as a result of bank trampling and browsing of riparian vegetation.

While mining activity had not occurred at the Lost Cabin Mine site for several decades, Broken Arrow Mining, LLC began conducting mineral exploration, using hand tools, at lode sites 1, 2, and 3 in March of 2000. This activity has continued to present and may expand to include mechanized equipment, depending on the nature of the decision made in conjunction with this analysis. Future activity could include expansion from prospecting and discovery to a larger scale mining operation. While it cannot be determined how large of an operation could take place, it is likely that there would be more human presence, larger equipment, and more ground disturbance than currently proposed.

Lands, Minerals, and Non-recreation Special Uses

EXISTING CONDITION

This area of the Medicine Bow National Forest is open to mineral entry, which means any person has the statutory right to enter upon the public lands to search for and develop valuable mineral deposits. An operator is entitled to access in connection with mineral operations (36 CFR 228.12). However, the location and means of the access must be included in the approval of the Plan of Operations.

The Lost Cabin Mine falls entirely within Management Area 2A, which emphasizes semi-primitive motorized recreation opportunities.

Lands

There are some private inholdings located within the analysis area. The majority of these private lands are mining claims that were patented under the Act of May 10, 1872, otherwise known as the General Mining Law of 1872. Some of these parcels are currently being developed as recreation cabin sites. Access across NFS lands to these parcels varies with an increase in requests and applications for roads to cabins. At this time there is no year-round residency.

Non-recreation special uses that occur in the analysis area include road easements, other easements, and permits for irrigation ditches. These are long-term easements.

At this time there are no existing permits, nor are any applications pending, for communication sites or utility corridor special use permits in the Lost Cabin Analysis Area. There is one application for trail access to a private inholding located in this analysis area.

Minerals

This area has had considerable historic mining activity in the central portion of the Grand Encampment Mining District. Early mining activity dates back to the late 1800s and early 1900s. At that time miners searched the hills and ravines in the area for gold and other minerals. Some deposits were located, but few were developed into producing mines.

Copper was discovered in 1874 and, in 1900, platinum and palladium were discovered and sporadically mined. Records from the U.S. Bureau of Mines show that the Encampment Mining District production from 1898 to 1911 was 21,800,780 pounds of copper, 29,318 ounces of silver, and 2,237 ounces of gold. In the 1930s, economics lead to another “rush” that lasted a few years. Mine operations ceased at most of the mines due to a variety of circumstances, including declining metal prices, ore complexity, outbreak of war, and other political or human-related factors.

Since the early 1900s there has been little mineral activity. Minor mineral development and exploration work occurred in the Ferris Haggarty Mine area in the early 1970s. The Ferris Haggarty Mine is located approximately 3 miles southwest of the Lost Cabin Mine.

The eastern portion of the analysis area makes up the western portion of the Grand Encampment Mining District. Other than the Lost Cabin mine activity, there is no active mining in the area, but there is much evidence of historic mining. The analysis area has continued to have some professional and amateur prospecting occurring.

The project area has been identified by the Wyoming Geological Survey as having a moderate to high potential for the occurrence of minerals. It is situated within the Vulcan Mountain mineralized area, and is believed to have a moderate to high potential for the development of these minerals.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1: Proposed Action: Approve Plan of Operations

Alternative 1 would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine site, using motorized equipment for access and sampling. These activities are authorized by the United States Mining Laws (Act of May 10, 1872; 30 U.S.C. 21-54), which grant a statutory right to enter upon public lands to search for minerals.

ALTERNATIVE 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Alternative 2 would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine site, using motorized equipment for access and sampling. This alternative would not allow the clearing of NFSR 4172, and the location of the crusher site would be moved to NFSR 431.1A for wildlife protection.

ALTERNATIVE 3: No Action

Alternative 3 would allow Broken Arrow Mining, LLC to conduct mineral exploration at the Lost Cabin Mine site by use of hand tools only. No motorized equipment for access or sampling would be allowed.

CUMULATIVE EFFECTS

Alternatives 1 and 2 would fulfill the requirement authorized by the United States Mining Laws (30 U.S.C. 21-54). Alternative 3 would not. The only difference between the alternatives is the use, or lack thereof, of motorized equipment in the Mowry Peak IRA.

Forest Plan Consistency

Alternatives 1 and 2 would be consistent with mineral and mining direction contained in the 1985 Forest Plan (Plan page III-4); Alternative 3 would not.

Infrastructure

EXISTING CONDITION

The Teddy Creek Project Transportation Analysis for the Hayden Ranger District analyzed the transportation system near the Lost Cabin Mine site. Forest Supervisor Sonny O'Neal approved this plan on August 8, 1984. Prior to this transportation analysis, and after 1956, several National Forest timber sales improved the road system in the area. These timber sales included South Spring Creek, Vulcan Mountain, and Cow Creek. Map #3 in the Teddy Creek Transportation Plan displays the proposed road system for this area. Ways 4170 and 4170H, which lead up to the mine, were not shown as part of the Transportation System. The plan does state that "Mineral exploration activities and mineral development activities will either use existing roads or build a road, either permanent or temporary, to meet their specific access needs. There are no current or planned exploration or development access needs."

The primary access to this area has changed greatly in the last 25 years with the construction of NFSR 443 (Jerry Accord Road). This road was connected to the Battle Highway in the late 80's with the Teddy Creek Timber Sale, creating increased access to the Jack Creek Area. According to this transportation plan, NFSR 431.1A does not connect to NFSR 434, and the Road Inventory Report indicates that it also dead ends. The cut-across exists but is not a legal open road.

NFSRs 440, 443, and 447 (portion to the closure gate) are shown as existing roads planned to be managed as open for motorized travel except for seasonal closures, depicted on the Travel Management Map in the 1985 Medicine Bow National Forest Land and Management Plan. NFSR 447.1A is also shown as a road to remain in a primitive condition, to be managed open for motorized travel except for seasonal closures.

In October 2000, Forest Supervisor Jerry Schmidt signed a Forest-Wide Travel Management Decision to restrict all forms of motorized use, with the exception of snowmobiles, to designated routes on the Medicine Bow National Forest. This decision eliminated all off-road motorized travel in the Lost Creek Mine area, other than within 300 feet of designated open roads.

The Forest Service Road Identification Methods and Database has changed in the last 20 years. In the 80's and early 90's the majority of the routes in the database were only roads being managed as needed system roads, which included primarily access roads (mostly maintenance level 3, 4, & 5), closed single purpose roads (maintenance level 1), and major user-created roads (maintenance level 2). Minor user-created roads existed, but all were not included in the database and were not considered important enough to be added to the system. In the late 90's, primitive user-created roads open to public use were added to the database (Infra & GIS) with GPS positions. These roads were to be evaluated at a later date (to be left open or closed) with phase II as required by the Forest-Wide Travel Management Decision. Ways, user-created routes, and historic roads located in the Lost Cabin Mine area were not inventoried because they were closed behind a closure gate on NFSR 439.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1: Proposed Action: Approve Plan of Operations

Under Alternative 1, 0.4 miles of NFSR 4172 would be opened to motorized use. This road is currently closed with deadfall and is re-vegetated with 4' to 6' high trees. Opening this road has the potential to increase sediment and erosion in the watershed. For this reason, this alternative is less desirable for the Forest infrastructure than Alternative 2.

This alternative would allow motorized access for mining activities without changing the current road system in any substantial way. Many of the drainage improvements required by this alternative should be performed even if this activity does not occur. Drainage improvements would reduce erosion and sedimentation, and would be included in the Plan of Operations.

ALTERNATIVE 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Under Alternative 2 the proponents would be allowed to access NFSRs 439, 431, and 431.1A to milepost 1.16 with full-sized motorized vehicles. These roads are closed with a gate at the beginning of NFSR 439. A crusher would be set up at this location, and access to the mine would be limited to ATV's and a small rubber-tracked bobcat. The proposed crusher site is located in a turnaround, which is 5/64 acres in size but can easily be made 1/4 acre in size. It is estimated that 400 cubic yards of dirt would have to be moved to enlarge the area to 1/4 acre.

This alternative would allow motorized access for mining activities without changing the current road system in any substantial way. Many of the drainage improvements required by this alternative should be performed even if this activity does not occur. Drainage improvements would reduce erosion and sedimentation, and would be included in the Plan of Operations.

This alternative would have a minimal impact to the current road system, and may actually improve the system through installation of the proposed drainage improvements.

ALTERNATIVE 3: No Action

The primary intent of gated roads, like NFSR 439, is for easy future multiple use access for timber harvesting, fire management, and mineral exploration. These management activities are described in the Forest Plan and the Teddy Creek Project Transportation Analysis. The No Action alternative would not allow any motorized access for mining activities beyond the closure gate on NFSR 439, therefore does not meet the intent of the Forest Plan. The current drainage problems along NFSR 417H would not be improved under Alternative 3.

CUMULATIVE EFFECTS

Cumulative effects of utilizing the system of closed roads from the gate on NFSR 439 to the Lost Cabin Mine should have minimal effects on the transportation infrastructure and its users. No other forest management activities are currently occurring, and no other projects that would utilize the closed road system are planned in the next 5 years. The highest use would be during the rifle hunting seasons in October, and even that is known to be minimal, based on past traffic surveillance data. Based on the information known at this time, there would be no significant effect as it pertains to the transportation system.

Forest Plan Consistency

All alternatives in the 1985 Forest Plan would allow for mineral exploration in the Lost Cabin Mine area since the mineral rights have already been filed. The 1872 Mining Law requires mining access even if the area was designated as Wilderness.

Watershed, Soils, Aquatics and Fisheries

EXISTING CONDITION

Physical Existing Conditions

Watersheds and Streams: Lost Cabin Mine is located primarily in the Spring Creek Watershed (Hydrologic Unit Code (HUC) 101800021301). The mining claim also includes a very small portion (1.5 acres) of the Cow Creek Watershed (HUC 101800021001) on the south side of the mining claim. Several kilometers downstream of the project area, the tributaries of Spring Creek (South and East Forks Spring Creek, Heather Creek, and Shingle Creek) leave National Forest System (NFS) lands and join together with South Spring Creek. The watershed and fisheries analysis area is defined as the Heather Creek watershed to Shingle Creek (including the Shingle Creek watershed) and the watersheds of East Fork Spring Creek, the South Spring Creek to the confluence of Chippewa Creek, and the headwaters of Cow Creek to Nellie Creek. This analysis area will be used to describe existing conditions and to analyze cumulative watershed effects; this area is larger than the project area defined above. Since the majority of the mining claim area, road access, historic mining road and proposed crusher sites are located in the Heather Creek watershed, this analysis focuses on effects to the streams and riparian areas in Heather Creek.

Flows are highest in the spring and early summer due to snowmelt runoff, with smaller peaks from localized summer rainstorms. These headwaters streams are small, perennial, high gradient streams that gradually flatten out as they reach the valley bottom downstream on private land.

All streams within the analysis area are designated as High Quality Waters - Class 2 streams. Class 2 waters are those surface waters known to support populations of fish and/or drinking water supplies and are considered to be high quality waters (WYDEQ, 2001 p. 9).

Lakes and Reservoirs: South Spring Creek Lake, Silver Lake, and Cow Creek Reservoir are the only reservoirs in the analysis area. South Spring Creek Lake is located in sections 2 and 11, T. 14 N., R. 86. W. The reservoir lies on private land and is approximately 2.4 km (1.5 mi) upstream from the project area. This reservoir stores irrigation water for use on private rangeland in the lower Spring Creek Watershed. Silver Lake is located in section 18 and Cow Creek Reservoir is located in section 17 of T. 14 N., R. 85 W. These two reservoirs are also located either wholly or partially on private land and store irrigation water for use downstream in the lower Cow Creek Watershed. Several small lakes and ponds are scattered throughout the headwaters of both the South Spring Creek and Cow Creek watersheds.

Riparian Areas, Floodplains and Wetlands: Narrow riparian and small wetland areas exist along the stream channels and around seeps in the area. The streams in this area are small and steep with no appreciable floodplains. The nearest wetlands mapped by the National Wetlands Inventory (NWI, USFWS, various dates) are located approximately 0.5 mi. away in the headwaters area of South Spring Creek to the southwest and Cow Creek to the southeast. Several small seeps have been observed in the headwaters of South Heather Creek approximately 0.6 mi. to the east of the mining claim (K. Miller, pers. comm. 9/23/02).

Soils: According to the Soil Survey of the Medicine Bow National Forest (Draft, 1989), all of the soils in the project area are rated as severe for sheet and rill erosion and for wheeled Off Highway Vehicles (OHVs). The amount of soil erosion that could occur depends on several factors, such as steepness and length of slope, the amount of exposed mineral soil, precipitation, and any mitigation measures that would be in place.

Effects of Past and Current Activities: Timber harvest, road construction, and grazing have occurred in the headwaters of these watersheds on NFS lands. In the local area, the greatest watershed effects observed were from roads located near the riparian areas (primarily Ways 4170 and 4170H) and from skid trails from past timber harvest (Purchase 2002). NFSR 4170 and Way 4170H are currently contributing sediment from erosion on the road surface in several areas to South Heather Creek. This is due to a lack of adequate drainage structures, such as waterbars or drain dips. The remaining roads in the area have stable, vegetated cut and fill slopes and did not appear to be contributing sediment to streams other than in the immediate areas around stream crossings. NFSR 4172, a closed and obliterated road, has partially recovered from use, with dense conifer and shrub regeneration that has already reduced compaction and increased soil productivity on the road bed. Skid trails in old timber harvest areas have compacted the soil so as to create a network of small channels. These channels route sediment to streams and increase the surface drainage network, increasing peak flows.

Cattle grazing in the headwaters of South Heather Creek has impacted the stream channel and riparian areas due to bank trampling and browsing of riparian vegetation (Kent Miller, pers. comm. 9/24/02).

Past mining activities on Vulcan Mountain appear to have only localized effects. These activities (primarily mine shafts and prospecting pits) have disturbed the immediate area around the shafts and pits, but no sediment transport offsite was observed. No signs of groundwater drainage from any of the past mining activities in this area were observed during several trips to the mining claim during the summer of 2002.

Biotic Existing Conditions

Fisheries: Lost Cabin Mine is located high on a ridge top that divides the Spring Creek and Cow Creek watersheds. These watersheds are in the North Platte River basin where there are no native trout. Thus, there is no concern for Colorado River cutthroat trout or other native trout. Common non-native trout (brook, brown, and rainbow) do inhabit these drainages since their introduction in the late 1800's. These trout are considered management indicators, but are not cause for viability concern, given their widespread distribution across the Forest and Region. Rainbow trout, brook trout, and longnose sucker were identified in South Spring Creek just below South Spring Creek Lake (T.14N., R.86W., Section 2, elevation 9,400, WGFD 1985). Brook trout were identified in the South Fork of Heather Creek (T.15N., R.85W., S32, elevation 8,840, WGFD 1985). These are the closest fish populations that could be affected by this proposal.

Amphibians: Some amphibian habitat is associated with the perennial streams listed above. There is also limited potential for amphibian habitats in spring/seep tributaries to South Fork Heather Creek, located approximately 0.5 miles to the east and north of the proposed activities. Chorus frogs are the most likely species to occur there. One western boreal toad (*Bufo boreas boreas*) sighting was recorded in T.15N., R.85W., Section 34 in 1996. Under appropriate conditions, there is potential for western boreal toad habitat within several kilometers of the proposed activities, but there is no known amphibian habitat within 1 mile of the project site.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1: Proposed Action: Approve Plan of Operations

Soil Compaction and Productivity:

Direct and Indirect Effects: Alternative 1 would increase soil compaction on NFSR 4172 and Way 4170H and would cause soil compaction at the proposed crusher pad and on the ATV/bobcat trails. These areas would stay compacted during the life of the project. Frost heaving and revegetation on the sites should gradually decrease compaction over the decades, following the end of the mining activities. The estimated increase in compacted area is roughly 3.8 acres.

Soil productivity would be reduced in areas of compacted soil due to the loss of water holding capacity and pore space in the soil. Soil productivity could also be indirectly affected by contaminated surface water. Water draining from mine shafts, prospecting pits, and backfill piles may carry heavy metals that could add toxins to the soil and reduce soil productivity. The proposed mitigation measures would reduce this effect. However, the area surrounding the crusher and the area under and around the backfill piles would still have reduced soil productivity until the areas are reclaimed.

The mine shafts and prospecting pits are located in areas with very thin, if any, soil. The ground consists primarily of rock with lichens, grass, and low alpine plants. Due to the large amount of rock and thin soils, soil compaction is not a factor. However, the productivity of the alpine ecosystem would be altered in the excavated areas.

Cumulative Effects: Increased soil compaction and reduced soil productivity have occurred as a result of roads, skid trails, and landings from past timber harvest. Most of the skid trails and landings in this area still show signs of compaction. This project would slightly increase the area of reduced soil productivity in the area. Over time, skid trails and landings from past timber harvest would recover, thereby reducing the area of compacted soil. The proposed excavations, in combination with the existing mine shafts and prospecting pits, would increase the area of altered ground in this alpine ecosystem.

Erosion and Sedimentation:

Direct and Indirect Effects: Alternative 1 has the potential for short-term, localized sediment movement downslope from the clearing of NFSR 4172, creating a crusher pad, improving and using Way 4170H, and from using the ATV/bobcat trails.

Clearing NFSR 4172, creating the crusher pad, and installing the waterbars on Way 4170H would produce the greatest amount of sediment, especially during and after the disturbance. By the end of the first year, the sediment production would begin to decrease as the disturbed areas settle and re-vegetate.

Sediment from Way 4170H has the greatest potential to be delivered to streams and riparian areas due to the presence of an intermittent stream which crosses this road. After the waterbars are installed, sediment production from this road would decrease from existing levels because water would be dispersed. Sediment from newly disturbed areas along NFSR 4172 and the crusher pad is not likely to be delivered to riparian areas or streams due to the upland location of the road and the pad. These features are located approximately 0.3 mi from South Heather Creek.

In areas where the slopes are steep, ATV trails are likely to erode during rainstorms and spring runoff. However, waterbars and dips would decrease the amount and severity of erosion. This sediment would be carried to the lower end of the trails in the saddle between the two peaks in the mining claim. Due to the location at the top of the ridge, this sediment would not reach any wetlands, riparian areas, or streams.

Since the prospecting pits and mine shafts are located in areas of rock with very little soil, it is highly unlikely that these areas would produce any sediment outside of the excavated area.

Cumulative Effects: Existing roads in the area, especially Ways 4170 and 4170H, are currently delivering sediment to streams as a result of natural processes. In addition, cattle use of riparian areas is adding sediment from bank trampling along stream channels and in riparian areas. The Proposed Action would likely increase sediment during the first year as mentioned above. In following years, sediment delivery to streams would likely be the same or even less than existing levels due to the improvement of Way 4170H.

Water Quality:

Direct and Indirect Effects: Contamination of localized surface and groundwater quality could occur as a result of the mining activities. If groundwater or surface water comes in contact with air and sulfidic minerals (either in a mine shaft, discovery pit, or backfill piles), a chemical reaction would result in the water and it would become more acidic. Acidic ground and/or surface water could then leach heavy metals, such as copper, out of the rock. If this water flows into a stream or wetland, the heavy metals would contaminate the aquatic ecosystem.

Mitigation measures have been designed to prevent the movement of water into and through the mine shafts, pits, and discovery piles. The existing mine shafts are constructed vertically, preventing groundwater, if present, from leaving the shaft. All pits and shafts are to have a berm constructed to divert surface runoff from entering these excavations. Probably the greatest risk of contamination is the creation of any new backfill piles. However, mitigation measures should reduce this risk.

An additional source of contamination could occur in the event of an accidental spill while refueling or operating the ATVs and/or bobcat. However, the potential for negative water quality effects is low if all mitigation requirements are followed.

Cumulative Effects: Cattle grazing in the area has the potential to locally affect water quality. Where cattle congregate, in areas of South Heather Creek, nutrients levels (nitrogen and phosphorus) are probably slightly elevated. Another source of contaminants would be from the open road system. Spills or leaks from passing vehicles can contribute hydrocarbons and other pollutants to streams. However, there are no known water quality concerns as a result of existing activities in the area. If mitigation measures are followed, the cumulative effects of past, current, and proposed activities are not expected to change existing water quality.

Riparian Areas, Wetlands, and Aquatic Habitat:

Direct and Indirect Effects: During the first year of this project, sediment production and delivery would increase. Sediment reaching South Heather Creek is likely to increase slightly through the first year and the following spring runoff. Riparian areas and wetlands would not be directly affected, as no activities are occurring in these areas, nor are there activities in critical upslope areas that would make indirect effects likely.

Indirect effects to aquatic habitat and/or populations could occur as a result of chemical or physical water quality degradation from sediment input or from soil and water contamination during mining activities. The headwaters of South Heather Creek are the most likely to be affected; however, the amount of sediment is likely to be minimal, and not expected to alter aquatic habitat. Chemical alteration of aquatic habitat is considered to be highly unlikely due to the mitigation measures in place. None of the jurisdictional wetlands, mapped by the National Wetlands Inventory, are downslope of the proposed activities. Potential sediment and contaminants from the Lost Cabin Mine would either drain into South Heather Creek or to South Spring Creek below the location of the wetlands.

Cumulative Effects: The road system, cattle grazing in riparian areas, and past timber harvest have altered aquatic habitat, primarily by increasing fine sediment in the stream channel. This project would slightly increase sediment in the headwaters of South Heather Creek for the first year, and then would decrease sediment through improving the road. Overall, the cumulative effects on South Heather Creek would not significantly change the aquatic habitat from the existing condition.

ALTERNATIVE 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Soil Compaction and Productivity:

Direct and Indirect Effects: This alternative would have less area of soil compaction, since NFSR 4172 would not be re-opened and used. Under this alternative, less excavation would be required for the crusher pad, although some excavation would still be required to enlarge the area. Soil compaction would increase on the historic mining road, the crusher pad, and on the ATV trails. Estimated increase in compacted area is 0.8 hectares (2.0 acres). These areas would stay compacted during the life of this project as described under the Proposed Action. Soil productivity would also be affected by mining activities and contaminated surface water as described in the Proposed Action.

Cumulative Effects: Cumulative effects would be similar to the Proposed Action, although they would be slightly less, due to the smaller increase in compacted areas.

Erosion and Sedimentation:

Direct and Indirect Effects: Sediment from this alternative has the potential for short-term, localized sediment movement downslope from creating a crusher pad, improving and using Way 4170H, and from using the ATV trails.

Sediment production would be less under this alternative than under the Proposed Action, both due to less disturbed area, and because a bobcat would be used instead of a larger bulldozer to install waterbars on the historic mining road. Because the bobcat is a smaller machine, it does not create as much disturbance to build the waterbars. Like the Proposed Action, the greatest sediment delivery would be from Way 4170H, and would occur during the first season and the following spring runoff. Sediment delivery would decrease as the disturbed ground re-vegetates.

Sediment from the crusher pad would not likely be delivered to riparian areas, as it would be located at least 300 feet from any drainage, stream channel, or riparian area. The effects from the ATV trails and excavations would be the same as under the Proposed Action.

Cumulative Effects: Like the Proposed Action, this alternative would likely increase sediment during the first year. However, the amount of sediment delivered to streams in following years would be less than under current conditions. In following years, sediment delivery to streams would likely be less than existing levels, due to the improvement of Way 4170H.

Water Quality:

Direct and Indirect Effects: The effects on water quality, apart from sediment delivery, would be the same as the Proposed Action. The same mitigation measures recommended under the Proposed Action would be used in this alternative.

Cumulative Effects: Cumulative effects would be the same as the Proposed Action.

Wetlands, Riparian, and Aquatic Habitat:

Direct and Indirect Effects: During the first year of this project, sediment production and delivery would likely increase slightly. Sediment reaching South Heather Creek may increase slightly through the first year and the following spring runoff. Riparian areas and wetlands would not be directly affected, as no activities would occur in these areas.

Indirect effects are similar to the Proposed Action, except that this alternative would deliver slightly less sediment to South Heather Creek.

Cumulative Effects: Cumulative effects would be the similar to the Proposed Action.

ALTERNATIVE 3: No Action**Soil Compaction and Productivity:**

Direct and Indirect Effects: New soil compaction (0.3 acre) could occur in the mine claim area from people repeatedly accessing the same areas (e.g., mine shafts and discovery pits).

Effects on soil productivity related to the excavations would be the same as the Proposed Action. However, there would be no contamination associated with sample rock piles or the crusher site, as all sample rock would be transported off forest after being crushed.

Cumulative Effects: Cumulative effects would include a very slight increase in compacted area. However, the increase would be less than for any of the other alternatives.

Erosion and Sedimentation:

Direct and Indirect Effects: Way 4170H would continue to deliver sediment to South Heather Creek, since no new drainage structures would be constructed. The trails used by people within the mine claim to access the different sites could also erode and transport sediment downslope.

Sediment production would be less for the first year under this alternative, although there is a potential for Way 4170H to continue to contribute increasing amounts of sediment, due to the lack of waterbars or other drainage structures.

Cumulative Effects: This alternative would add sediment to South Heather Creek. This Creek likely already has increased levels of fine sediment from existing roads, cattle grazing, and timber harvest areas.

Water Quality:

Direct and Indirect Effects: The potential for contamination of surface and ground waters is very low, as the crusher and sample rock piles would not be located on Forest. The mitigation measures to prevent surface and groundwater flow into and out of mine shafts and discovery pits would be the same as for the other alternatives.

Cumulative Effects: There would be no effect on water quality and no cumulative effect or change from existing conditions, except concerning the level of fine sediments.

Wetlands, Riparian, and Aquatic Habitat:

Direct and Indirect Effects: Fine sediment levels would increase in the headwaters of South Heather Creek over time, due to increased delivery from Way 4170H. Riparian areas and wetlands would not be directly affected, as no proposed activities would occur in these areas.

Cumulative Effects: Aquatic habitat in the headwaters area has the potential to degrade over time, depending upon the condition of Way 4170H. These effects would likely not persist past the confluence of North Heather Creek.

Biological Assessment

Review of the Wyoming Natural Diversity Database (WNDD 2001) and on-site review indicated that there are *no threatened or endangered aquatic species* within the analysis area. Downstream threatened or endangered aquatic or riparian-dependent species include Platte River mainstem species (whooping crane, least tern, piping plover, pallid sturgeon, Eskimo curlew, and bald eagle). These species are affected by changes in stream flow timing and amount. Neither the Proposed Action nor the other alternatives would affect stream flow timing or amount. Therefore, these species have been dismissed from analysis. In summary, there would be *no effect on any threatened or endangered aquatic species or habitats*. The BA for aquatic species is included in Appendix 1 of this Final EIS.

Biological Evaluation

There is no aquatic habitat within the project area as defined. Therefore, no impacts to sensitive amphibian species are anticipated. However, there is potential for sensitive amphibian habitat within the analysis area, at locations approximately 0.5 miles or farther from the mine site. Sensitive aquatic species not known or suspected to occur in the analysis were eliminated from detailed consideration. Mitigation measures are described in Chapter 2 and have been applied to each species identified in the BE to make determinations for impacts to habitat and populations. The BE for aquatic species is included in Appendix 1 of this Final EIS.

Management Indicator Species (MIS)

The Forest Plan lists several potential aquatic MIS. Western boreal toad, wood frog, and beaver are considered ecological indicator species, and Colorado River cutthroat trout and brook trout (our most “common trout species”) are management indicators for fish (Table 2). There are no aquatic MIS listed for either recovery species or featured species. Where species eligible for consideration as MIS (western boreal toad, wood frog, and Colorado River cutthroat trout) have already been described elsewhere in this document, discussion is not duplicated here. The purpose of this MIS assessment is to identify possible effects the alternatives could have on management indicator species known or suspected in the project area. Project effects on aquatic MIS are summarized in the table below and are substantiated by analysis of impacts to habitats and populations that follows immediately.

Table 2. Aquatic and Riparian-dependent Management Indicator Species (MIS) with Potential to Occur in the Lost Cabin Mine Project Area

Species	Status	Suitable Habitat Present (in project area)	Population Present (in project area)	Project Effects
Brook trout (<i>Salvelinus fontinalis</i>)	MIS	**YES: Perennial streams 0.5 miles and farther downstream from mine site.	NO	No effect on habitats or populations with mitigation
Rainbow trout (<i>Oncorhynchus mykiss</i>)	MIS	**YES: Perennial streams 0.5 miles and farther downstream from mine site.	NO	No effect on habitats or populations with mitigation
Western boreal toad (<i>Bufo boreas boreas</i>)	C, S, MIS	**YES: Riparian areas, streams, wetlands and ponds present more than 0.5 miles from mine site.	POTENTIAL to occur in adjacent wetlands; not selected for project monitoring.	No effect on habitats or populations (See BE)
Wood frog (<i>Rana sylvatica</i>)	MIS, S	NO: Riparian areas, streams, wetlands and ponds; but no wood frogs have been recorded in the Sierra Madre or were found in recent surveys.	NO	No effect on habitats or populations (See BE)
Colorado River cutthroat trout (<i>Oncorhynchus clarki pleuriticus</i>)	Pet., MIS, S	NO: Project is in North Platte drainage outside of CRCT native range.	NO	No effect on habitats or populations.
Beaver (<i>Castor canadensis</i>)	MIS	**YES: Beaver ponds and streams 0.5 miles and farther downstream from mine site.	NO	No effect on habitats or populations.

C= candidate species; S = sensitive species; MIS = management indicator species; Pet. = petitioned for listing; * = habitat is present within the 0.32 km (2/10 mile) radius of and adjacent to the proposed project area but not within any proposed treatment area; ** = habitat not within 0.32 km (2/10 mile) radius of project activity areas.

Management Indicator Species with Habitat within the Lost Cabin Mine Project Area

Common trout (brook and rainbow trout) and western boreal toad have potential habitat within the Lost Cabin Mine analysis area, although none occur within the immediate project area.

Common Trout (brook trout): Because this project is not likely to have any measurable effect on brook trout or their habitat, the Lost Cabin Mine project would have **no direct, indirect, or cumulative effect on the status of habitats or populations** of brook trout on the planning unit.

Common Trout (rainbow trout): Because rainbow trout maintain strong populations, have abundant habitat, and are the second most widely distributed common trout on the Medicine Bow Forest, there is low concern for impacts to this species. Because this project is not likely to have any measurable affect on rainbow trout or their habitat, the Lost Cabin Mine project would have **no direct, indirect, or cumulative effect on the status of habitats or populations** of rainbow trout on the planning unit.

Forest Plan Consistency

If recommended mitigation for the Lost Cabin Mine project is effectively implemented, all alternatives would be consistent with the 1985 Forest Plan.

Recreation

EXISTING CONDITION

The main access to the analysis area is by both open and closed (gated) roads. Most of the open roads are available summer and fall to all types of motor vehicles. The analysis area has no developed recreation facilities within its perimeter. A portion of the Continental Divide National Scenic Trail (CDNST) is part of the far western boundary of the analysis area. Across the District, the CDNST is known as National Forest System Trail 412. The CDNST has been designated a National Scenic Trail since 1978. The number of people using the entire length of the CDNST across the District is low, although this number is slowly increasing annually. This portion of the CDNST is designated both as a trail and a minimum standard four-wheel drive road. For approximately ½ mile, users of the CDNST have a view of the area in the immediate vicinity of the Lost Cabin Mine. At the present time the view of this area from the CDNST is of high quality and very natural appearing. When north of Bridger Peak, the highest point on the Divide in this area one looks across the South Spring Creek drainage to Vulcan Mountain.

There are two portions of State of Wyoming Snowmobile Trails that bisect the analysis area. Trail C is a designated un-groomed trail that is marked along NFSR 443. The other is Trail E, also designated an un-groomed trail that is marked along NFSR 450 and 443.1G that intersects Trail C on NFSR 443. Jack Creek Campground is approximately 6 miles northwest of the claim area.

National Wilderness System Lands

There are no designated National Wilderness System lands within the immediate vicinity of the project area.

Inventoried Roadless Areas (IRAs)

The Lost Cabin Mine is located within the 6,241-acre Mowry Peak IRA. Mowry Peak is the last remaining IRA greater than 5,000 acres located north of Wyoming Highway 70 and east of the Continental Divide. Access to the IRA is generally easily obtained from several roads and trails leading into this part of the Forest.

Other nearby IRAs are located on the west side of the Continental Divide. The Deep Creek IRA is located northwest of the Mowry Peak, and the Bridger Peak IRA is located to the southwest. Due to terrain and topography, the Lost Cabin Mine claim locations are not visible to the majority of acres located within these two IRAs.

There are currently no Forest Service designated motorized trails in any of the abovementioned IRAs⁵. However, the majority of the boundaries for all IRAs are on or near open motorized roads and trails. The Mowry Peak IRA does have illegal off road-motorized use. This use is predominantly from ATVs in the South Spring Creek Lake area, and from Bridger Peak to the private land located in the headwaters of Cow Creek. The District has closed several user-created ATV trails in this area, and will need added field presence, law enforcement, and more special order closures.

Even with the illegal use, much of the Mowry Peak IRA offers a high quality Semi-Primitive Non-Motorized recreation experience. The area immediately surrounding Vulcan Mountain is approximately one mile from any open road or trail, and possibly offers Forest users a primitive recreation experience. Under the 1985 Forest Plan, the area around Vulcan Mountain has a visual quality objective of partial retention. This same area has been inventoried with an existing condition for scenic integrity of very high, because the landscape appearance and character has not been changed much by humans. The Vulcan portion of the Mowry Peak IRA has a landscape that is mainly free of influence from humans or their activity. The Vulcan Mountain area is where one could expect to observe change to visual resources resulting from an ecological change.

Natural Integrity and Appearance

Natural integrity is the extent to which long-term ecological processes are intact and operating. Impacts to natural integrity are measured by the presence and magnitude of human-induced change to an area. Such impacts include physical developments (e.g., roads, fences, cabins), recreation developments, domestic livestock grazing, and mineral developments. Apparent naturalness (appearance) means that the environment looks natural to most people using the area. Even though some of the long-term ecological processes of an area may have been interrupted, the landscape of the area generally appears to be affected by the forces of nature. If the landscape has been modified by human activity, the evidence is not obvious to the casual observer, or it is disappearing due to natural processes.

⁵ The IRAs were identified through the National Roadless Rule effort and under the current Medicine Bow National Forest Plan Revision.

The majority of the Mowry Peak IRA has retained a high degree of natural integrity and apparent naturalness with little evidence of human impacts. However, some localized impacts are noticeable within the vicinity of the Lost Cabin Mine. These are mainly in the form of historic mining activities, including cabins, a hoist house, and wagon trails. Natural reclamation of the historic mining activities and the associated wagon trail is occurring; however, they do continue to detract from the area's natural appearance.

Opportunities for Solitude and Remoteness

Solitude is a personal, subjective value defined as isolation from the sights, sound and presence of others, and human developments. Solitude can be impacted by numbers of people and parties encountered on a trail or in a camping area, human-generated noise, or improved access. Remoteness is a perceived condition of being secluded, inaccessible, and out-of-the-way. The physical factors that can create remote settings include topography, vegetative screening, changes in legal public access, and the distance from human impacts, such as roads and mining operations (sight and sound).

Although the Mowry Peak IRA provides opportunities for visitors to experience a sense of solitude and remoteness, these opportunities are rated as low, due to the short distance from the perimeter to the core of the area, illegal ATV incursions, private inholdings within the area, and the fact that recreational use of the area has increased over the past 15 years. The core area acreage would be less than a square mile in area. The Lost Cabin Mine area is located within the eastern portion of the Mowry Peak core area. Scattered timber stands with open areas of rock and grass allow some solitude. Illegal ATV use, private landowners accessing their land, and past exploration activities have reduced the sense of solitude and remoteness in the immediate vicinity of the Lost Cabin Mine area and from ridges within the Mowry Peak IRA. Topographical screening is rated moderate, due to ridges and valleys, and vegetative screening is rated moderate.

Primitive Recreation Opportunities

A primitive recreation experience includes the opportunity to experience solitude, a sense of remoteness, closeness to nature, serenity, and spirit of adventure in an environment that offers a high degree of challenge and risk. Impacts related to primitive recreation experiences are usually expressed in changes to the physical setting, activities occurring in the area, and changes to the social experiences of others.

The Mowry Peak IRA offers many challenges with a moderate diversity of recreational experiences. Opportunities for primitive recreation (one of the predominant uses of the area) are rated as moderate. The combination of high mountain ridges and valley provide choice recreational settings for hunting, hiking, backpacking, and nature appreciation. As discussed previously, the on-going activities at the Lost Cabin Mine have reduced a sense of solitude and remoteness in the localized area; however, the opportunities for primitive recreation remain moderate.

Unique (Other) Features

Unique features include those special geological, biological, cultural, or scenic features that may be located within the area. A unique feature contained within the area is Vulcan Mountain, a prominent peak on the east slope of the Continental Divide. From this peak one can expect to view the upper Platte River Valley, the western portion of the Snowy Range, and the northern mountains of North Park in Colorado, including the Rocky Mountain National Park.

Manageability and Boundaries

Manageability and boundaries relates to the ability of the Forest Service to manage the area to meet size criteria (5,000 acres) and the other features discussed above. Changes in the shape of an area influence how it can be managed. The location of other proposed projects outside the area are also factors to be considered.

The majority of the Mowry Peak IRA has satisfactory manageability characteristics. Despite the illegal ATV use mentioned above, the area still offers a high quality Semi-Primitive Non-Motorize recreation experience, due to its many peaks, ridges, and valleys.

Recreation Opportunity Spectrum

Recreation Opportunity Spectrum (ROS) provides a framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged into six classes along a continuum or spectrum. The classes are as follows: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban.

The ROS class designation for the project area is Semi-Primitive Motorized, which allows motorized travel on open designated routes. Very good gravel roads or two-track roads providing motorized recreation opportunities surround this Semi-Primitive Motorized area. Semi-Primitive Motorized areas are characterized by predominantly natural appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. Areas are managed in such a way that minimum on-site controls and restrictions may be present but are subtle. Motorized access is allowed but typically not accessible by sedans, trailers, RVs, or motor homes. Although the ROS class assigned to the project area is Semi-Primitive Motorized, much of area offers a Semi-Primitive Non-Motorized experience, due to the inclusion of the Mowry Peak IRA.

Recreational Use of the Area

The primary summer and fall recreation use in the area is dispersed recreation, which includes, but is not limited to: driving for pleasure along the existing open roads, hunting, fishing, four wheel drive use, hiking, picnicking, biking, camping, personal use firewood cutting, and riding horses. Hunting is the most popular activity, mainly in the form of big game hunting, but also including grouse hunting. This area is predominantly used by day hunters, with few hunting camps established during the season.

Dispersed campsites within the analysis area are concentrated along open roads. The District surveyed this area for dispersed campsites in 1998/1999 and found that the average distance from the Lost Cabin Mine area to a dispersed campsite to be one mile or farther. Very few campsites were found just east of the claim area. The camping occurs primarily during big game hunting season in the fall, though there is some camping use in the spring and summer. The historic cabin that gives this project its name is located at the old workings just north of Vulcan Mountain. Although Forest visitors have used it illegally for shelter, it is uncertain if this was during fall hunting season or as a warming hut during the winter snowmobile season.

Winter use in the immediate vicinity of the Lost Cabin Mine is minor. There are two types of use: motorized and backcountry skiing. Most of the snowmobile riding actually occurs to the west and south of this area, although materials left in the above-mentioned cabin would suggest the cabin is being used for a warming hut or winter quarters.

ENVIRONMENTAL CONSEQUENCES

Direct effects occur when Forest users are displaced by actual activities, be it logging, road closures or any other types of projects. This affects all activities. No forest management activities are occurring or are planned in the Lost Cabin Mine project area in the next five years. The highest use of the area is during the rifle hunting seasons in October, and second highest is the archery hunting seasons in September. All alternatives would have minimal effects during the highest use seasons because the majority of the hunting activities occur near the motorized access routes. There may be some displacement of backcountry hunters but that is expected to be minimal. Minimal is defined here to be less than 5 percent of the hunters within a 5-mile radius of the mine.

Effects Common to All Alternatives (Including No Action)

Recreation activities and use would continue in the area regardless of the selected alternative. Based on nationwide trends, recreation use in the area would increase over time.

ALTERNATIVE 1: Proposed Action: Approve Plan of Operations

Direct and Indirect Effects: The selection of this alternative would have a short-term direct effect on the Mowry Peak IRA, due to the use of Way 4170H and the use of ATVs and the bobcat at the mine site. This would impact the natural integrity, appearance, opportunity for solitude, remoteness, primitive recreation opportunity, and unique feature of the area. This direct effect would end when the mineral operation ends, and ground disturbance within the IRA is fully rehabilitated and completely re-vegetated.

The selection of this alternative would have a direct effect on recreation users in the near vicinity of the mineral operation and road use. Dispersed recreation users would encounter the operator's campsite and the operators themselves while they would be using the closed road system. As this closed road system is the main access to the east central portion of the Mowry Peak IRA, this use would displace these people to areas not currently being used. The disruption would be short-term and on a relatively small area.

Dispersed recreation within the vicinity of mineral operations would be affected for the duration of the mineral operation. Dispersed recreation users would be displaced to other locations where the operation is not occurring. Mineral sampling, haulage, and crushing could create potential hazards to area users, and some may find the sight, noise, and dust created by these operations offensive. This displacement would be short-term and only when the operation is occurring. The duration and timing of this activity could also create some behavioral changes in the big game herds that would impact hunt quality and hunter success rates for a small number of hunters.

Cumulative Effects: Solitude, scenic value, landscape, recreation experience, naturalness, and primitive experience are all subjective and based on individual values. Some recreation users of the area could see the mineral operation as a degradation of an IRA. They could further quantify this degradation as a reduction in acreage of the IRA.

ALTERNATIVE 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Direct and Indirect Effects: The effects to the Mowry Peak IRA would be the same for this alternative as those described under Alternative 1. Effects to dispersed recreation within the vicinity of mineral operations would be similar to those described in Alternative 1. However, the potential displacement of recreation users would occur from July 1 to October 15 only.

Cumulative Effects: The cumulative effects would be the same for this alternative as Alternative 1.

ALTERNATIVE 3: No Action

Direct and Indirect Effects: The No Action alternative would result in no direct or indirect effects on recreation.

Cumulative Effects: The No Action alternative would result in no cumulative effects on recreation.

Forest Plan Consistency

The alternatives analyzed in this Final EIS are consistent with Forest Plan (1985) Direction and Standards and Guidelines as they relate to recreation.

Wildlife

EXISTING CONDITION

A. Diversity (Forest Plan page III-14)

Relative to the forested area within diversity units (sixth-level watersheds), the Forest Plan requires that at least 20 percent is to provide vertical diversity, at least 30 percent is to provide horizontal diversity, at least 5 percent will be maintained in grass/forb stages, and at least 10 percent will be maintained as true old growth in 30-acre or larger patches, preferably in spruce-fir stands.

Vertical Diversity

The Forest Plan Final EIS (1985) defines vertical diversity as the diversity of an area that results from the complexity of the above-ground structure of the vegetation; the larger the number of tiers (layers) of vegetation or the more diverse the species makeup, or both, the higher the degree of vertical diversity. A minimum of 1,628 acres within the project area is needed to meet the Forest Plan requirement for vertical diversity. The Medicine Bow National Forest has developed a scorecard, and scorecard values of at least 38 indicate, fairly accurately, a measure of good vertical diversity. A total of 3,819 acres of forested stands within the project area currently have a scorecard rating of 38.

Horizontal Diversity

Horizontal diversity is defined in the Final EIS (1985) as the diversity in an area that results from the number of plant communities or successional stages, or both. The Forest Plan requires that a minimum of 2,441 acres within the project area provide horizontal diversity in the combined watersheds. A breakdown of forested acres in the watersheds, by forest type, shows that the distribution of acres among the different forest types and structural stages meet Forest Plan horizontal diversity requirements (Table 3).

Table 3. Structural Stage Acres by Vegetation Type for Horizontal Diversity and Grass/forb

FORESTED	Grass/forb	Shrub/- Seedling	Pole	Mature	Older	Total (%)
Aspen			116	17		133 (1)
Lodgepole	87	583	709	1,502	359	3,240 (34)
Spruce-fir	30	191	508	2,472	1,682	4,883 (52)
NON- FORESTED	Grass/forb	Shrub/- Seedling	Pole	Mature	Older	Total (%)
Mountain Grassland	151					151 (2)
Mountain Shrub						
Sagebrush	154	915				1,069 (13)
Total	423	1,688	1,333	3,991	2,041	9,476
Percent	4	18	14	42	22	100

The desired future condition for horizontal diversity in this watershed involves site-specific goals related to managing forest cover types with harvest (2A, 7E) and managing forest cover types to provide variety in stand age, shape, and structure (4B).

Grass/forb

The Forest Plan requires a minimum of 407 acres be maintained in the grass/forb stage in the analysis area. 423 acres from the lodgepole, spruce-fir, grassland, and sagebrush vegetation types comprise grass/forb acres. The Forest Plan requirement for grass/forb is being met.

Old Growth

A minimum of 814 acres of old growth is needed in the analysis area to meet the Forest Plan requirement (10 percent). Currently, 818 acres are designated to be managed as old growth.

B. Wildlife Resource Management (Forest Plan pages III-29 to III-33)

Manage and provide habitat for recovery of endangered and threatened species.

In accordance with section 7(c) of the ESA, a list of federally listed and proposed species was developed for this project. Listed, proposed, and candidate species to be included in the analysis are based on a species list received from the USFWS for this project (letter from Michael M. Long to Scott Armentrout, ES-61411, dated 01/11/02), and an updated Threatened and Endangered Species of Carbon County, Wyoming list from USFWS (dated May 15, 2002). Several other species, which are on the Regional Forester's sensitive species list but are not listed, proposed, or candidates for listing, were also included in the analysis. On July 25, 2001, the yellow-billed cuckoo was determined to be warranted for listing, but was precluded by higher priority listing actions for the distinct population west of the Continental Divide. This species will be added to the Candidate species list, but is not included in this analysis since the project occurs east of the Continental Divide.

The analysis and determination of potential effects of any proposed projects on listed, proposed, candidate, and other sensitive species was documented in a Biological Evaluation/Assessment (Appendix 2).

Maintain habitat for viable populations of all existing vertebrate wildlife species.

The Forest Plan (1985) requires that habitat capability for vertebrate wildlife species on the Forest will be maintained at least at 40 percent or more of potential. The Final EIS (1985) defines MIS as a species selected because changes in its population indicates effects of management activities on the plant and animal community, or, a species whose condition can be used to assess the impacts of management actions on a particular area.

Elk are the selected featured species for this analysis. American marten and hairy woodpecker were selected as management indicator species for this analysis. These three species were selected for the following reasons: 1) The scope of the proposal is quite small in magnitude; 2) Concerns from the public and other agencies were expressed for some of these species, and 3) These species are representative of potential changes from proposed actions. Table 4 shows existing condition habitat capability values for the analysis area.

Table 4. Analysis Area Existing Condition Habitat Capability Values

SPECIES	ANALYSIS AREA
Elk – summer	0.25
American marten	0.52
Hairy woodpecker	0.77

Existing condition habitat capability values are currently above the 1985 Forest Plan requirement for American marten and hairy woodpecker. These two species typically use mature or older forest structural stages, and 74 percent of the forested analysis area consists of these structural stages. The hairy woodpecker also utilizes older aspen stands, of which there are only a few acres in the analysis area.

Only summer habitat capability values for elk are presented, since the project area is used primarily as spring/summer/fall range. Existing condition habitat capability does not meet Forest Plan Standards and Guidelines for elk in this watershed (0.40). Elk will use virtually all structural stages of all forest types for feeding; however, early successional stages, (i.e., grass/forb, shrub/seedling) meadows, open pole-size and mature stands, and all aspen stands provide optimal feeding areas. The more dense pole-size and mature stands provide optimal hiding cover for elk. Extensive cover habitat is available, but foraging habitat is limited (Table 3). Existing condition does not meet Forest Plan requirements, due to limited foraging habitat and road density. Road density in the watershed consists of 10.35 miles of arterial roads, 3.84 miles of collector roads, and 13.09 miles of local roads. This creates an adjusted open road density of 0.92 miles/mile. Road density also contributes to the low habitat value for elk. There would have to be an adjusted open road density of 0.02 roads/mile to meet habitat values for elk, given the existing vegetation conditions.

Provide habitat for MIS at a level no lower than 40 percent of potential. Maintain effective wildlife habitat by providing habitat continuity and juxtaposition of cover and open areas around critical wildlife habitat.

Items a-f in the 1985 Forest plan (pages III-31 & 32) identify Standards and Guidelines for management activities in proximity to raptor nests, including bald eagle, peregrine falcon, golden eagle, ferruginous hawk, Swainson's hawk, northern goshawk, prairie falcon, and osprey.

Field surveys were conducted in the watershed in 1992, and 1996 through 1998. These surveys were completed to locate and monitor goshawk nests. Nine goshawk nests were found. All nests were located several miles north of the project area. The goshawk surveys included a portion of the project area along closed NFSR 439 where suitable goshawk habitat occurs. Additionally, field surveys were conducted within the project area beginning in July 2002. However, surveys occurred too late to appropriately identify nesting activities. No active raptor nests were discovered. Additional surveys will be completed prior to operations if an action alternative is selected.

Items g & h (Forest Plan page III-32) identify Standards and Guidelines for management activities in proximity to rookeries and grouse leks. There are no known rookeries or grouse leks within the watershed.

Items i, j, and k (Forest Plan pages III-32 & 33) relate to shrublands and do not apply to the actions described in this Final EIS.

Item l (Forest Plan page III-33) relates to activities that might affect bighorn sheep lambing grounds. There are no bighorn sheep lambing grounds in or near the analysis area.

C. Wildlife Habitat Management (Forest Plan pages III-34 to III-36)**Use both commercial and noncommercial silvicultural practices to accomplish wildlife habitat objectives.**

Item a (Forest Plan page III-34) describes hiding cover requirements to be maintained along natural and created openings, arterial and collector roads, and streams and rivers. Not more than one-half of the hiding cover can be contiguous to another portion of the hiding cover; and, along streams and rivers, 20 percent or more of the edge must be in thermal cover. These requirements are currently being met.

Item b (Forest Plan page III-34) requires that, in watersheds dominated by forested ecosystems, a minimum of 40 percent (50 percent in management area 4B) of the diversity unit is to be maintained in deer or elk hiding cover, which is well distributed over the unit. Also, 20 percent of the diversity unit is to be maintained in thermal cover. The hiding cover requirement for the watershed is 3,790 acres.

Acres were tallied for each of the hiding cover and non-hiding cover categories. Results of this analysis show that 5,049 acres (53 percent) of the watershed is currently in hiding cover. This level of hiding cover is above Forest Plan requirements.

The minimum requirement for thermal cover in the watershed (20 percent) is 1,895 acres. Currently, there are 1,164 acres (12.3 percent) of forested stands in the analysis area that qualify as thermal cover according to Forest Plan criteria (definition in FEIS). This is below the Forest Plan requirement, and would be a consideration in any vegetation management activities.

Elk security has been an issue identified in response to scoping for most vegetation management activities on the District in recent years, and was identified for the proposed mining action. The current Forest Plan does not have a land allocation for specific security areas, nor does it contain standards and guidelines for minimum requirements. Designation of such areas would have to be accomplished through the Forest Plan Revision. However, a GIS analysis of areas currently meeting security area criteria was conducted in conjunction with the recent Forest-wide Travel Management Environmental Assessment and Decision (October 2000) using information contained in the Forest's RIS database. The project occurs in Wyoming Game and Fish Department Sierra Madre elk herd. From the travel management analysis, it was determined that 32 percent of the Sierra Madre Mountains is elk security habitat. This is above the 30 percent determined necessary for effective elk security habitat.

Maintain edge contrast of at least medium or high along at least 30 percent of the edge next to all created and natural openings, roads, and riparian areas (Forest Plan page III-35).

Edge contrast was evaluated using aerial photographs. The analysis showed that edge contrast is being maintained.

ENVIRONMENTAL CONSEQUENCES

A. Diversity

The Proposed Action would have a small effect on vertical and horizontal diversity. Existing trees and other vegetation would be removed from Way 4170H, NFSR 4172, and the crusher site. It is assumed an 8-foot width would be needed for ATV use (with bulldozer clearance) on Way 4170H and a 12-foot width would be needed on the remainder of the described road network. Reconstruction of Way 4170H would result in conversion of approximately 1.6 acres of sapling size lodgepole and subalpine fir to roadbed. The reopening of existing roads and crusher site would result in conversion of 4.5 acres of mostly grass/forb through seedling with a few pole to mature size lodgepole and spruce-fir to roadbed. Mining activity would remove up to 0.5 acres of high elevation grass/forb habitat.

Road reconstruction and reopening and clearing of the crusher site would cause a reduction in hiding cover due to vegetation removal. The loss would be approximately 22 acres, leaving 5,032 acres of the watershed in hiding cover. This would still be above the 3,790 acres required for the watershed.

Road reconstruction and reopening would cause a reduction in thermal cover due to vegetation removal. The crusher site is not located in thermal cover. The loss would be approximately 5 acres, leaving 1,159 acres of the watershed in thermal cover. This is below the Forest Plan requirement. The minimum requirement for thermal cover in the watershed (20 percent) is 1,895 acres.

Road reconstruction and reopening would cause a reduction in designated old growth due to vegetation removal. The crusher site is not located in designated old growth. The loss would be approximately 2 acres, based on an 8-foot clearance of hazard trees, snags, or logs on either side of a 1.6 mile length of Way 4170H. These actions would leave 816 acres of designated old growth in the watershed. A minimum of 814 acres of designated old growth is needed in the watershed to meet the Forest Plan requirement (10 percent). The Proposed Action would meet Forest Plan designated old growth requirements.

Mining activities would convert up to 0.5 acres of grass/forb to excavation, leaving 422.5 acres in grass/forb. The Forest Plan requires a minimum of 407 acres be maintained in the grass/forb stage. Forest Plan requirements would be met.

Alternatives 2 and 3 would change existing condition as presented in Table 5. Alternative 2 would produce smaller disturbance to horizontal diversity, vertical diversity, hiding cover, thermal cover, and old growth compared to Alternative 1, due to less road clearing. A small amount of grass/forb would be disturbed under Alternative 3, due to use of hand tools at the mining claim.

Table 5. Vegetation Disturbance Under Alternatives

VEGETATION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	FOREST PLAN (All alternatives)
Horiz./Vertical Diversity	6.1 acres to road	2 acres to road	0	Meets Requirement
Hiding Cover	22 acres to road	12.3 acres to road	0	Meets Requirement
Thermal Cover	5 acres to road	0.3 acres to road	0	*Below Requirement
Designated Old-Growth	2 acres to road	0.5 acres to road	0	Meets Requirement
Grass/Forb	0.5 acres to mining	0.5 acres to mining	0.5 acres to mining (hand tools)	Meets Requirement

***NOTE:** Thermal cover requirements would continue to be below Forest Plan requirements, as this cover was lacking in the existing condition.

B. Wildlife Resource Management

Threatened, Endangered, Proposed, and Sensitive Species

The analysis and determination of effects of the proposed projects on federally threatened, endangered, proposed, and Forest Service sensitive species are documented in detail in the Biological Assessment/Biological Evaluation (Appendix 2). Determinations made in the BA/BE are as follows:

For Bald Eagle and Canada lynx a "**May affect, not likely to adversely affect**" determination is made for all alternatives.

For all sensitive species a "**May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species viability range wide**" determination is made for all alternatives.

Management Indicator Species

Management indicator species (MIS) selected for analysis include elk as the selected featured species (of recreational and economic importance). Since most of the potential activities associated with this project occur in mature or older stands of spruce-fir, American marten and hairy woodpecker were selected for analysis. Table 6 shows the results of the analysis of the Proposed Action on habitat capability values for MIS selected for analysis. Existing condition values are also shown.

Table 6. Comparison of Existing Condition and Proposed Action Habitat Capability Values For MIS

Species	Ex. Cond./Alt. 3	Alternative 1	Alternative 2
Elk – summer	0.25	0.25	0.25
American marten	0.52	0.52	0.52
Hairy woodpecker	0.77	0.77	0.77

As can be seen in Table 6, habitat capability values do not change from the existing condition under any of the alternatives. This result is due to several factors. First, there is a small increase of 4.7 miles of local roads (2.7 reopening and 2.0 construction/reconstruction) within the 10,348-acre watershed under the Proposed Action (Alternative 1), which allows for the most road construction/reconstruction. There is a small decrease of 6.1 acres of grass/forb, sapling size lodgepole, and sapling size spruce-fir due to road construction and the gravel crusher site under Alternative 1. Mining activity could convert an additional 0.5 acres of grass/forb to excavation; however, none of the alternatives propose removal of tree cover from the claim. So, the remaining 50 acres would be retained in low-density medium and large size spruce-fir. Still, habitat values for elk remain below Forest Plan requirements.

Elk are negatively affected by road density (Hillis et al. 1991) by using some habitats less and increasing vulnerability. Although road density does not increase significantly for the watershed, open road density does increase in several square miles with the opening of closed roads and road construction/reconstruction for the Proposed Action. Additionally, there is already illegal use of the 431.1A road system by ATVs during hunting season. This illegal activity would likely increase with the road improvements of the Proposed Action. It is expected that elk would use this area less frequently during summer due to vehicle traffic, mining activity, and activity at the crusher site. Considerable effort would be required to effectively make these roads systems unusable by ATVs during hunting season.

Martens have been found to be highly selective of microenvironments for thermal cover, for protection from predators, and for access to subnivian foraging sites (Buskirk and Ruggiero 1994). Removal of snags, dead-topped trees, live trees, and dead/down coarse woody debris in the road construction/reconstruction and crusher site would remove potential resting sites, and natal and maternal denning sites for martens.

Hairy woodpeckers use logs, snags, dead-topped trees, and live trees for foraging and nesting. Removal of snags, dead-topped trees, live trees, and dead/down coarse woody debris in the road construction/reconstruction and crusher site would remove foraging sites and potential nesting sites. Recent research has found that snags appropriate for nesting are limited in the Medicine Bow National Forest (Loose 1993).

C. Wildlife Habitat Management

Hiding Cover

The value of hiding cover to big game is in affording areas for bedding, foraging, calving/fawning, escape, thermal relief, and at times security. The Forest Plan requires a minimum of 40 percent hiding cover in each of the forested diversity units. There are currently 5,049 (53 percent) acres of hiding cover in the watershed. The Proposed Action would reduce this by 22 acres, and Alternative 2 would reduce this by less than 15 acres (Table 5). Forest Plan requirements would be met.

The analysis area is in compliance with the Forest Plan guideline of retaining 60 percent of the perimeter of a natural or created opening and 40 percent of each arterial and collector road in hiding cover (Forest Plan page III-34). There are no created openings (i.e., clearcuts) proposed.

Thermal Cover

Currently, 1,164 acres (12.3 percent) provide thermal cover, which is below the 20 percent (1,895 acres) Forest Plan requirement. The Proposed Action would remove 5 acres, while Alternative 2 would remove 0.3 acres of thermal cover for road/trail construction (Table 5). Many of the stands of spruce-fir at the elevation of proposed disturbances are composed of widely spaced large trees, which do not naturally provide thermal cover.

CUMULATIVE EFFECTS

The existing condition analyzed in this Final EIS represents the cumulative effects of natural and human-caused processes and events. The combined environmental effects of all human-related activities may be more substantial than those caused by individual actions. Since the Proposed Action and Alternative 2 would alter vegetation, cumulative effects must be considered.

A. Related Actions: Past, Present, and Future

Information on past timber harvest contained in the Forest's RIS database is presented in Table 7. Past harvest has been grouped into two general categories. Clearcut and overstory removal treatments are combined since the resulting stands are similar. All partial cutting treatments were also combined. Acres of past harvest have occurred over the last 30 years. Under the existing condition, 18.8 percent of the forested area has had some type of vegetation treatment. After implementation of the Lost Cabin Mine project, 18.9 percent of the forested area would have experienced some type of vegetation management activity. The 6.1 acres for forested vegetation treatment involves clearance for roads and crusher site.

Table 7. Summary of Cumulative Harvest Activities in the Lost Cabin Mine Analysis Area

ACTIVITY	ACRES
Past Harvest:	
Clearcut/overstory removal	452
Partial cutting treatments	1,080
Lost Cabin Mine Proposed Action:	
Road clearance & crusher site	6.1
Excavation sites	0.5
Roads:	
Existing adjusted open road density	0.92 mi/sqmi
Road construction/opening associated with project	4.7 miles
Roads closed after 5 years	4.7 miles
Post-treatment adjusted open road density	0.92 mi/sqmi

B. Diversity

Fire History/Disturbance Ecology

In the Sierra Madre ecosystem, disturbance is the critical factor in maintaining coexisting species. Stand origin dates, estimated from tree growth ring data, provide a map of where and approximately when stand replacing/regenerating fires occurred. Studies conducted in the southern portion of the Sierra Madre by the University of Wyoming found a fire interval of less than 200 to 400 years. In other words, on average it would take approximately 200 to 400 years for a series of stand replacing fires to burn this portion of the area. Data collected during the studies would tend to indicate that large stand replacing fires (1000+ acres) burned portions of the range every 100 years or so. Lower elevations that tend to be drier tend to have shorter fire interval while wetter higher elevations have a longer interval. As has been the trend throughout the Rocky Mountain west, the policy of controlling fires since the creation of the Forest in 1902 is reflected in the build up of natural fuels and the conversion through natural succession of what were aspen stands, to subalpine fir and lodgepole pine dominated stands at the lower elevations of the Forest.

Mature and older forests make up 64 percent of the area. Spruce-fir is the dominant forest type in the watershed. Proposed projects involve road opening and construction/reconstruction, crusher site, and mining excavation. The distribution of acres among the various forest types and age classes shown in Table 3 would not change significantly as a result of the Proposed Action. Road and crusher site development would convert 6.1 acres to dirt and gravel. The mining could convert up to .5 acres of grass/forb and open canopy medium and large size spruce-fir to excavation. However, the proposal does not include removal of these trees. The amount of forest matrix would remain the same. Effects on horizontal diversity would be minimal. There would be a decrease in vertical diversity in the 6.1 acres used for roads and crusher site. The amount of forested area providing vertical diversity in the analysis area is high as can be seen by the amount of mature and older forest shown in Table 3.

Old Growth

Some road construction/reconstruction is in a 97-acre stand of designated old growth. Road or trail construction would cause up to a 2.0-acre loss within this stand. There would be a minimal effect from this activity, and Forest Plan requirements for old growth would still be exceeded by two acres. There are also an additional 3,819 acres that meet old growth characteristics but are not designated as old growth within the project area.

Snags

The 1,532 acres of past harvest and the 27.3 miles of existing open roads in the watershed have reduced snag abundance within the watershed. However, the high proportion of the project area consisting of mature or older stands (64 percent) and the number of acres exhibiting old growth characteristics (3,819 acres) would provide suitable snag habitat.

C. Wildlife Resources

Threatened, Endangered, Proposed, and Sensitive Species

Determinations for threatened, endangered, proposed and sensitive species are identified above and are presented in detail in the BA/BE prepared for this project (Appendix 2).

Management Indicator Species

Road construction/reconstruction, crusher site, and mining activities directly and indirectly alter wildlife habitats. Direct effects occur as a consequence of converting existing habitat to dirt and gravel. This represents a loss of habitat to forest wildlife. There would also be indirect losses of habitat due to the displacement effects caused by human disturbance, thus reducing the effectiveness of habitat along roads and the excavation site.

Quality of habitats for some species could decrease due to the loss of trees, snags, and logs. Mining excavation would eliminate up to 0.5 acres of grass/forb habitat. Generally, fragmentation and connectivity would not be affected by proposed activities. The amount and distribution of openings would not be affected since there is no proposed clearcutting.

The scope and duration of the proposed project would be small. Activity in forested vegetation would construct a minimum road surface and crusher site. Only 2.0 miles of road construction/reconstruction would be added to 27.3 miles of existing open roads in the watershed. Road density would be 0.92 miles/mile of adjusted open roads. Post-activity adjusted open road density would not be changed from the existing condition upon completion of management activities (Table 7).

The most extensive population and habitat relation data currently available for any MIS species is for big game animals. Wyoming Game and Fish Department's (WGFD) herd unit objective for the Sierra Madre elk herd is 4,200 elk. The population is estimated at approximately 5,500 elk (WGFD, 2001 Job Completion Report). The current population is above herd objective and the trend is decreasing; however, the management goal is to decrease the herd population to approach the herd objective. The condition of this elk population is consistent with the habitat capability analysis. Proposed activities would lower the hiding cover by less than 15 acres and thermal cover by less than 5 acres. Excavation would cause the loss of roughly 0.5 acres of foraging habitat. The northwest edge of a block of security habitat would be lost due to the use of NFSR 4172. Elk will typically be displaced ½ mile by human disturbance associated with proposed activities (FEIS).

The hairy woodpecker is dependent on older forest. Older forest is abundant in the analysis area. The analysis for this species is based on the habitat capability analysis (Tables 4 and 6), knowledge of habitat use by this species, the types and amounts of habitat available in the analysis area, and population information. Habitat available for this species is consistent with the results of the habitat capability analysis. Structural stages 4A, 4B, 4C, and 5 provide the best habitat for the hairy woodpecker, and there are 6,032 acres of these structural stages in the analysis area. Construction/reconstruction of Way 4170H occurs in these structural stages. There would be a direct loss of approximately 4 acres. There would also be a small indirect loss of potential nesting habitat associated with road travel and activity and noise at the crusher site and mine excavation. The hairy woodpecker would be minimally affected or not affected by the proposed treatments.

Analysis results indicate that there is sufficient habitat for marten and hairy woodpecker. Habitat capability, even under existing conditions, is below Forest Plan standards for elk due to the limited amount of foraging habitat and, to a much lesser extent, road density. This is expected, since the watershed is less than 10,000 acres and existing forest types emphasize cover.

See Appendix 3 (Lost Cabin Mine Draft EIS Comments and Responses) Comment #37 for further MIS discussion and analysis.

D. Wildlife Habitat

Hiding Cover

Currently the analysis area is well above Forest Plan hiding cover requirements. Implementation of the proposed activities would reduce hiding cover but still maintain hiding cover above Forest Plan requirements.

Thermal

Currently, 1,164 acres (12.3 percent) provide thermal cover, which is below the 20 percent (1,895 acres) Forest Plan requirement. The Proposed Action would remove an additional 5 acres of thermal cover, while Alternative 2 would remove 0.3 acres. Many of the existing stands of spruce-fir at the elevation of proposed disturbances are composed of widely spaced large trees. These do not naturally provide thermal cover because canopy closure is below 70 percent. There have been 452 acres of clearcuts and 1,079 acres of partial cuts in the last 30 years. Some of these would have provided thermal cover.

Forest Plan Consistency

All the alternatives are consistent with the standards and guidelines in Forest Direction and Management Area Direction on pages III-4 through III-193 of the Forest Plan, with the exception of habitat capability for elk in summer and thermal cover. The existing condition for thermal cover and elk habitat capability are currently below Forest Plan requirements and would continue to remain so despite the alternative selected. Habitat capability requirement is 40 percent and the watershed provides 25 percent of capability. The thermal cover requirement is (20 percent) 1,895 acres. Currently, there are 1,164 acres (12.3 percent) of thermal cover in the watershed.

Heritage Resources

EXISTING CONDITION

A literature search was conducted for the proposed Lost Cabin Mine Project. The search included T.14N., R.85W., Sections 5, 6, and 7, and T.14N., R.86W., Sections 1 and 12. The literature search examined the Carbon County Courthouse records, Wyoming Cultural Records Office files and Medicine Bow National Forest cultural records, including atlases, GLO plats, historic forest and quadrangle maps, and forest history files.

The literature search for the proposed Lost Cabin Mine Project indicated that one small survey (less than 1 acre) had been previously completed within the project area, and an historic mine is located in the project area. An Archaeological Survey of the Sierra Madre and Medicine Bow Mountains, MB-80-12, was completed in 1978 for core-hole drilling activities in various locations throughout the Forest. Although part of the survey was completed within the Lost Cabin Mine historic site vicinity, the site was not recorded during the survey, and the overall survey was negative for cultural resources. Prior to 2002 the site had never been recorded, although the historic mine at the project location had been known of for many years, and the cabin is indicated on the Encampment, Wyo-Colo, Quadrangle Map, Edition of 1903, Reprinted 1926. Within one mile of the project area, three previously recorded sites are known: A log tent frame site that is not eligible for the National Register of Historic Places, an eligible cabin, and the Spring Creek Mine, which is also eligible.

An historical search of Government Land Office plats indicates that a “wood road” accessed the Lost Cabin Mine site as early as 1899 (currently Way 4170H). By 1901, an “improved road” that accessed Vulcan Mountain from Saratoga, Wyoming was in place. This road also provided a direct link with the Southern Wyoming Tramway, which carried mined ore to a smelter in Encampment, Wyoming. It further provided access to other major mining communities in the vicinity. Although the road is depicted on Forest Service maps until 1956, more recent inventories do not indicate that it is still a part of the Forest Transportation System (FTS).

The historic mine in the project area consists of several features: a log cabin with intact roof and walls; a main mine shaft with associated collapsed shaft house; a large dump-rock pile with cart rails on top; two secondary shafts, one with a collapsed shaft structure and one with cribbing still in place; a number of prospect pits and trenches; and a light scatter of historic debris.

Written records indicate that the project area has seen mineral exploration primarily from the 1920’s through the 1940’s, but also as recently as 1980.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1: Proposed Action: Approve Plan of Operations

Activities such as improving and widening the historic access road with a bobcat or dozer, entering and enlarging existing shafts, investigating backfill piles and sample rock with heavy equipment, and excavating new prospecting holes with a bobcat or with hand tools would adversely impact the Lost Cabin Mine historic site and would affect site integrity. The cabin would not be used during project activities.

Telephone conversations have occurred between the District Archeologist and the Wyoming State Historic Preservation Office (SHPO) regarding appropriate mitigation measures to avoid any adverse effects to the cultural resource site as a result of the project. A report documenting the findings of the 2003 survey for the project is being finalized for submission to Wyoming SHPO for review and consultation. It is anticipated that this consultation will be completed during the spring of 2004 before field season begins.

ALTERNATIVE 2: Modified Plan of Operations (Forest Service Preferred Alternative)

Activities such as improving the historic access road with a bobcat, entering and enlarging existing shafts, investigating backfill piles and sample rock, and excavating new prospecting holes with a bobcat or hand tools would adversely impact the Lost Cabin Mine historic site and could affect site integrity. For improving the historic access road, limiting machinery use to a bobcat would probably cause fewer disturbances to the site than the Proposed Action. The cabin would not be used during project activities.

Telephone conversations have occurred between the District Archeologist and the Wyoming State Historic Preservation Office (SHPO) regarding appropriate mitigation measures to avoid any adverse effects to the cultural resource site as a result of the project. A report documenting the findings of the 2003 survey for the project is being finalized for submission to Wyoming SHPO for review and consultation. It is anticipated that this consultation will be completed during the spring of 2004 before field season begins.

ALTERNATIVE 3: No Action

While non-motorized access and hand-tool work in the Lost Cabin Mine historical site area, as permitted by 36 CFR 228.4, would cause much less overall disturbance to the site than Alternatives 1 and 2, prospecting and sampling activities would still impact the site and may eventually affect site integrity. No improvements to the historic road would be made under this alternative. The cabin would not be used during project activities.

Telephone conversations between the District Archeologist and the Wyoming State Historic Preservation Office (SHPO) have occurred. Under a No Action alternative mitigation measures may not be necessary. A report documenting the findings of the 2003 survey for the project is being finalized for submission to Wyoming SHPO for review and consultation. It is anticipated that this consultation will be completed during the spring of 2004 before field season begins.

Direct Impacts: Under all alternatives, prospecting and sampling activities, whether conducted with small machinery such as a bobcat or with hand tools, would disturb the Lost Cabin Mine historical site and may adversely affect site integrity. Entering existing shafts may disturb structural remains, investigating sample rock may disturb existing dump rock piles, and excavating prospecting pits may change the site setting.

Indirect Impacts: Probable additional wear and tear on the Lost Cabin Mine historic site would result from increased pedestrian and ATV use within the site area during the project. Possible improvement of the historic access road and any improvements made to non-historic access roads would lead to easier post-project access to the site for visitors and possible increased vandalism.

CUMULATIVE EFFECTS

This project, in conjunction with other Forest activities such as timber harvesting, prescribed burning, recreation, and range activities, may have a cumulative effect on cultural resources in the form of increased soil erosion, increased visitor traffic and vandalism, and alteration of historic landscapes. Cumulative impacts of these types are difficult to quantify, but may be avoided or minimized through the implementation of appropriate, site-specific treatments, when deemed necessary through the consultation process with the Wyoming State Historic Preservation Office and the Advisory Council on Historic Preservation.

Forest Plan Consistency

All alternatives would be consistent with the 1985 Forest Plan as it relates to heritage resources.

Botany

EXISTING CONDITION

Pre-Field Review

The project area has no known or suspected occurrences, or potential habitat, for plant species formally listed or officially proposed under the Federal Endangered Species Act.

This BE only evaluates the effects of the alternatives to plants listed on the 1994 Region 2 sensitive species list because this project was well under way by the time the 2003 Region 2 sensitive species list became effective.

There are 81 plant species listed on the 1994 Region 2 sensitive species list, of which 12 are known to occur or are likely (biologically or geographically) to occur on the Medicine Bow-Routt National Forests {Fertig et al. 1994; Spackman et al. 1997; Species Conservation Project Website 2003}. Of these 12 species, 10 are not likely to occur within or near the project area and have been dropped from further consideration, including:

- *Botrychium lineare*, slender moonwort (Candidate Threatened & R2 Sensitive): Grassy slopes, among medium-height grasses, along edges of streamside forests.
- *Aletes humilis*, Colorado aletes: Grows in crevices of granite boulders and cliffs at elevations of 6400-8000 feet. This habitat type and elevation combination does not occur within the project area.
- *Aquilegia laramiensis*, Laramie columbine: Endemic to the Larmie Range of Wyoming, and not known to occur in the vicinity of the Yampa RD. Like Colorado aletes, it grows in crevices of granite boulders and cliffs at 6400-8000 feet, a habitat type and elevation combination that does not occur within the project area.
- *Carex livida*, livid sedge (R2 Sensitive): Restricted to peatlands, histisol soils and emergent wetlands. Often associated with sphagnum moss.

- *Cypripedium fasciculatum*, Clustered lady's slipper orchid (R2 Sensitive): Finds habitat in dry to moist upland lodge pole pine forest and less frequently in spruce fir forests from 8,000 – 10,500. This species is not likely to be affected driving on roads or in old landings.
- *Drosera rotundifolia*, round leaf sundew (R2 Sensitive): Restricted to floating mats within peatlands, histisol soils and emergent wetlands. Often associated with sphagnum moss.
- *Machaeranthera coloradensis*, Colorado tansy aster: Colorado tansy aster is not known from the vicinity of the project area. It is found in open gravelly sagebrush and dry tundra on specific calcareous soil microsites, which are not present in the analysis area including; limey-sandstone, shaley-gypsum, and redbed slopes.
- *Penstemon harringtonii*, Harrington's beardtongue: Found on calcareous soils in big sagebrush or pinyon-juniper forest, a habitat type/soil type combination not found in the project area.
- *Salix serissima*, autumn willow: Restricted to Albany County in Wyoming and Larimer, Park and Routt counties in Colorado in lower elevation fen habitats.
- *Sphaeromeria simplex*, Laramie false sagebrush: Endemic to the Laramie Basin in dry cushion plant communities on limestone ridges 7500-8600 feet in elevation, a habitat type that does not occur within the project area.
- *Sullivantia hapemannii*, Hapeman's coolwort: Associated with calcareous cliffs and boulder fields, a substrate type not found in the project area.

Species Evaluated in this Report

The analysis area has potential habitat for 2 plant species listed as Region 2 Forest Service sensitive on the 1994 list {Spackman et al. 1997, USDI 2002, Species Conservation Project Website 2003, Green 1997}:

- *Festuca halli*, Hall fescue: Hall fescue is not known from the vicinity of the project area. Hall Fescue is found in montane meadows, on slopes, and at the edges of open coniferous woods and meadows at 6800-11000 feet. It is usually on soils derived from calcareous parent material but is also reported on igneous soils. The soils documented to occur within the analysis area are derived from igneous parent material.
- *Ipomopsis aggregata ssp. weber*, Rabbit Ear's Gilia (Sensitive): Openings, in coniferous forests or from south-facing slopes and ridges dominated by *Artemisia tridentata* or brushy *Amelanchier/Chrysothamnus/Purshia/Prunus* stands on gravelly, clay-loam. This species is endemic to the Rabbit Ear Range.

Field Reconnaissance

No field surveys for PETS plant species were conducted specific to this project. Through mitigation under all action alternatives a botanist will be required to visit the flagged route at a time when plants could be detected to determine presence or absence of the plant species listed above.

A plant inventory occurred in the general area during the 2000 field season but was non-specific to the analysis area. In this effort, the Medicine Bow-Routt N.F. partnered with Ron Hartman, curator of University of Wyoming Herbarium, who conducted a general floristic/rare plant inventory for the Routt N.F. {Hartman et al 2001}. The resulting report provided an additional source of botanical knowledge which helped to determine which Threatened, Endangered, and FS Sensitive (TES) plants had the greatest potential to occur within the analysis area.

Conflict Determination and Analysis of Significance of Effects

ATVs would access an old mine on existing improved and historic roads. Near the summit of the historic road, the route to the mine becomes somewhat unclear as it winds through the dry alpine grass to the mine pit.

Through mitigation under all action alternatives the route where ATVs would be permitted to travel would be flagged to the mine pits. The flagged route would be surveyed by a botanist for Threatened, Endangered and Sensitive (TES) plants at a time when plants could be detected prior to ground disturbing activities. If TES plants are found in the within the project area the populations would be identified on the ground and buffered from all management actions that would have direct or indirect negative impacts to TES plant species.

From the mine pits the rocks would be dug up and removed from existing mine quarry/pit and mine tailings and would be transferred by ATVs to an existing landing downslope where the rocks would be crushed to ore by a crushing machine.

The vegetative cover types that would experience ground disturbance include an existing improved road, which travels through spruce-fir timber type and semi recovered alpine tundra (historic road and old mining claim) between 9,200 and 10,874 feet in elevation. The watershed/aquatics/soils report determined that no wetlands would be impacted by the proposal, with the closest being 0.5 miles away. The mining activities would occur on soils derived from igneous parent material including quartzite, granite, gabbros intrusive, both fresh and metamorphosed. The soils are classified as Med. Bow Soil Type 44. The soils where the road reconstruction and crusher/camper site are on Med. Bow soil Types 31 and 112.

ENVIRONMENTAL CONSEQUENCES

Common Name	Scientific Name	Status	Determinations of Effects		
			Alt 1	Alt 2	Alt 3
Rabbit ears gilia	<i>Ipomopsis aggregata ssp. weberi</i>	Sensitive	NO Impact	No Impact	No Impact
Hall's fescue	<i>Festuca hallii</i>	Sensitive	No Impact	No Impact	No Impact

Through mitigation under all action alternatives the route where ATVs would be permitted to travel would be flagged to the mine pits. The flagged route would be surveyed by a botanist for Threatened, Endangered and Sensitive (TES) plants during the second or third week in July (prior to ground disturbing activities). If TES plants are found in the within the project area the populations would be identified on the ground and buffered from all management actions that would have direct, indirect or cumulative negative impacts to TES plant species.

Rabbit Ears gilia is endemic to the Rabbit Ear Range. One disjunct population is known from the Sierra Madre Range but that site is unique. We feel there is a low likelihood that it would be found in this project area.

Hall fescue is usually on soils derived from calcareous parent material but is also reported on igneous soils. The soils documented to occur within the analysis area are derived from igneous parent material. We feel there is a low likelihood that it would be found in this project area

OTHER REQUIRED DISCLOSURES

Short-term Uses and Long-term Productivity

NEPA requires consideration of “the relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity” (40 CFR 1502.16). As declared by the Congress, this includes using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101).

The proposed activities would increase soil compaction on NFSR 4172, Way 4170H, the crusher pad, and on ATV/bobcat trails. Soil productivity would also be reduced in areas of compacted soil due to the loss of water holding capacity and pore space in the soil. During the first year of project implementation, sediment production and delivery would increase, primarily in South Heather Creek. Contamination of localized surface and groundwater quality could also occur as a result of the mining activities. Although these impacts would be most evident under Alternatives 1 and 2, they are expected to diminish after the project is completed, particularly if the mitigation measures identified in Chapter 2 are implemented appropriately.

As identified in the Recreation and Wildlife sections, there would also be a short-term displacement of Forest users and wildlife, respectively. These effects are expected to dissipate and return to previous levels after project completion. Under Alternatives 1 and 2, there would be a short-term change in the character of the Mowry Peak IRA. However, as vegetation along Way 4170H and at disturbed sites at the mining claim return to pre-existing conditions, these effects are also expected to dissipate.

Unavoidable Adverse Effects

Since Broken Arrow Mining, LLC is guaranteed reasonable access to their mining claim under the U.S. Mining Laws (Act of May 10, 1872) 30 USC 21-54), all alternatives would produce varying degrees of unavoidable adverse effects on the Mowry Peak IRA. Alternatives 1 and 2 would impact the IRA the most, due to road improvements to Way 4170H and the use of mechanized equipment at the mine site. Even though Alternative 3 would allow the use of hand tools only, impacts at disturbed areas would be evident until the sites re-vegetate.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mineral samples. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line rights-of-way or road.

Removal of mined materials would constitute an irreversible commitment of resources under all alternatives. Irretrievable commitments of resources would include the displacement of Forest users and wildlife, and the removal of vegetation along Way 4170H and at the crusher location. These resources would be impacted during the life of the project and would be most evident under Alternatives 1 and 2, and to a lesser degree Alternatives 3, since this alternative would not allow the use of motorized vehicles in the Mowry Peak IRA.

Other Laws and Regulations

NEPA at 40 CFR 1502.25(a) directs “to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with ...other environmental review laws and executive orders.”

Consistency with Wetlands/Floodplains Executive Orders: The Lost Cabin Mine project is expected to have no direct, indirect, or cumulative effects on floodplains, and is therefore consistent with Executive Order 11988 for the protection of floodplains. There are no identified wetlands in the project area, and only very limited potential for wetlands in the analysis area as a whole. Recommended mitigation measures are intended to further reduce risks to wetlands. The overall project is consistent with Executive Order 11990.

Clean Water Act: There are no State-designated impaired streams affected by this project, nor would the project increase risk of impairment, provided mitigation measures are implemented to protect water resources from chemical contamination. The project is not expected to have adverse impacts to water quality, coldwater biota, recreation, or other beneficial uses. A storm water discharge permit, from the State of Wyoming Department of Environmental Quality, for construction activities would likely be necessary to comply with the Federal Water Pollution Control Act. Recommended mitigation measures address this issue, and if followed, the proposed activities are consistent with the Clean Water Act.

Endangered Species Act: The Endangered Species Act of 1973 (16 USC 1531-1536, 1538-1540) requires federal agencies to conserve threatened and endangered species and the ecosystems they depend on. Forest Service policy is to protect the habitat of federally listed proposed (P), candidate (C), threatened (T), or endangered (E) (commonly referred to as T&E) species from adverse modification or destruction, as well as protect individual organisms from harm or harassment (FSM 2670.3). Biological assessments shall be prepared for each project authorized, funded, or conducted on National Forest land to determine possible effects the proposed activity may have on T&E species (FSM 2672.43). The biological assessment (BA) processes (FSM 2672.43) are intended to conduct and document activities necessary to ensure proposed management actions will not likely jeopardize the continued existence or cause adverse modification of habitat for T&E species.

Biological Assessments and Evaluations for aquatic and other wildlife species are contained in Appendices 1 and 2 of this Final EIS.

National Forest Management Act: The National Forest Management Act of 1976 (16 USC 1600-1602, 1604, 1606, 1608-1614) prevents watershed condition from being irreversibly damaged and protects streams and wetlands from detrimental impacts. Land productivity must be preserved. Fish habitat must support a minimum number of reproductive individuals and be well distributed to allow interaction between populations. Forest Service policy is to protect habitat of species listed in Forest Service Region 2 (Rocky Mountain), as sensitive species, from adverse modification or destruction, as well as protect individual organisms from harm or harassment (FSM 2670.3). Biological evaluations shall be prepared for each project authorized, funded, or conducted on National Forest land to determine possible effects the proposed activity may have on sensitive species (FSM 2672.43). The biological evaluation (BE) processes (FSM 2672.43) are intended to conduct and document activities necessary to ensure proposed management actions will not likely jeopardize the continued existence or cause adverse modification of habitat for sensitive species. Biological Assessments and Evaluations for aquatic and other wildlife species are contained in Appendices 1 and 2 of this Final EIS.

Forest Service policy requires habitat maintenance for all existing native and desired non-native plants, fish, and wildlife species, and that these species be managed to maintain viable populations (FSM 2601.2). Land and water management activities will integrate plant, fish, and wildlife habitat needs with other resources and programs. Where appropriate, mitigate habitat losses, consistent with Forest Plan goals and objectives developed in the Forest planning process (FSM 2601.2). Appropriate mitigation measures to ensure protection of the abovementioned species are contained in Chapter 2.

General Mining Law of May 10, 1872, as Amended (30 U.S.C. 21 – 54): Alternatives 1 and 2 would be consistent with the mining law, as the alternatives would allow the claimants “reasonable access” to the mine site using mechanized equipment, as proposed in their Plan of Operations. U.S. Mining Laws grant a statutory right to enter upon public lands to search for minerals. Alternative 3 (No Action) would not be consistent with U.S. Mining Laws.

Forest Plan Consistency

All the alternatives are consistent with the standards and guidelines in Forest Direction and Management Area Direction on pages III-4 through III-193 of the Forest Plan, with the exception of habitat capability for elk in summer and thermal cover. The existing condition for thermal cover and elk habitat capability are currently below Forest Plan requirements and would continue to remain so despite the alternative selected.

Wyoming Game and Fish Department's (WGFD) herd unit objective for the Sierra Madre elk herd is 4,200 elk. The population is estimated at approximately 5,500 elk (WGFD, 2001 Job Completion Report). The current population is above herd objective and the trend is decreasing; however, the management goal is to decrease the herd population to approach the herd objective. Proposed activities would lower the hiding cover by less than 15 acres and thermal cover by less than 5 acres. Excavation would cause the loss of roughly 0.5 acres of foraging habitat. It is the professional judgment of the biologist working on the Lost Cabin proposal that the habitat capability for elk in summer and thermal cover would not change statistically from the existing condition over the lifespan of the project.

The alternatives analyzed in this Final EIS were compared to the alternatives included in the December 2002 Medicine Bow Forest Plan Revision Final EIS (40 CFR 1506.4). The analysis found that the mining and road improvement activities associated with the alternatives analyzed in this Final EIS would not forego future decisions to be made under the Forest Plan Revision.

CHAPTER 4. CONSULTATION AND COORDINATION

Preparers and Contributors

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment. Also refer to page 106 for additional contributors.

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TRIBES:

E. Shoshone Traditional Leader	Backpacker Magazine
Shoshone Tribal Pres. Office	CO Off-highway Vehicle Coalition
N. Arapaho Traditional Elders	Colorado Wild
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Kootenai Cultural Commission	Horizons West Inc.
Lakota Teton Sioux Tribe	Laramie Daily Boomerang
S. Ute Tribal Council	Medicine Wheel Alliance
Ute Tribal Business Committee	Rawlins Daily Times
Ute Mtn. Ute Tribal Council	Big Horn Audubon Society
	Colorado Historical Society
	Conservancy of the Phoenix
	Forest Conservation Council
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Mary Forrester	John Swanson
Peter Guynn	John Thompson
Leonard Henderson	Kevin Webster
Richard Jeannerett	Roger Williams
Beth Jones	John Winkel
Mary Katherman	

Distribution of the Final Environmental Impact Statement

This Final Environmental Impact Statement has been distributed to individuals who specifically requested a copy of the document and to those who submitted substantive comments on the draft environmental impact statement. In addition, copies have been sent to applicable Federal agencies, federally recognized tribes, State and local governments, and organizations representing a wide range of views regarding mining activities. The list to whom a copy of the Final EIS was sent is contained in the project record located at South Highway 130/230, Saratoga, Wyoming, 82331.

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INDEX

<u>Topic</u>	<u>Page</u>
Abstract_____	iii
Alternatives_____	12
Background_____	2
Biological Assessment_____	70, 74, 41, 27
Biological Evaluation_____	70, 74, 41, 27
Document Structure_____	1
Erosion_____	9, 19, 28, 30, 31
Fisheries_____	27
Heritage Resources_____	53
Issues_____	8
Lands and Minerals_____	23
Mitigation_____	16
Monitoring_____	17
Public Involvement_____	7
Purpose and Need_____	6
Recreation_____	36
Soils_____	27
Summary_____	v
Water Resources_____	27
Watershed, Soils, Aquatics, and Fisheries_____	27
Wetlands, Riparian, and Aquatic Habitat_____	27
Wildlife_____	41, 74

APPENDICES

APPENDIX 1: Aquatic Biological Evaluation and Assessment

BIOLOGICAL ASSESSMENT

The purpose of the biological assessment (BA) is to identify possible effects the proposed action could have on threatened or endangered aquatic species in the project. Review of the Wyoming Natural Diversity Database (WNDD 2001) and on-site review indicated that there are *no* threatened or endangered aquatic species within the project area or the analysis area. Downstream threatened or endangered aquatic or riparian-dependent species include Platte River mainstem species (whooping crane, least tern, piping plover, pallid sturgeon, Eskimo curlew and bald eagle). These species are affected by changes in stream flow timing and amount. The proposed action or alternatives would not affect stream flow timing or amount, so these species have been dismissed from analysis. Thus, there would be *no effect* on any threatened or endangered aquatic species or habitats. Effects on candidate and petitioned species are described for sensitive species in the Biological Evaluation in the next section.

BIOLOGICAL EVALUATION

The purpose of this biological evaluation (BE) is to identify possible effects the proposed action could have on sensitive species known or suspected in the project area. In this case, there is no aquatic habitat whatsoever within the project area as defined. There is potential for sensitive amphibian habitat within the analysis area, at locations approximately 0.5 miles or farther from the mine site. Sensitive aquatic species not known or suspected to occur in the analysis area have been eliminated from detailed consideration. Environmental consequences and mitigation measures have been described, and have been applied to each species below to make determinations for impacts to habitat and populations.

Forest Service Sensitive Species

The U.S. Forest Service is required to provide habitats that are necessary to support viable populations of sensitive species and other wildlife (National Forest Management Act, 36 CFR 219.19):

For planning purposes, a “viable population” shall be regarded as one that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence well distributed in the planning area. In order to ensure that viable populations will be maintained, habitat must be well distributed so that those individuals can interact with others in the planning area.

The Rocky Mountain Regional Endangered, Threatened, and Sensitive Species Lists (USDAFS 1994) were used to determine those species that may occur on the Medicine Bow National Forest. Table 1 provides the list of sensitive aquatic species for the Lost Cabin Mine project area. The determination of effects is substantiated by analysis that immediately follows this table.

Table 1. Forest Service Listed Sensitive Aquatic Species that May Occur in the Project Area or Be Affected by The Lost Cabin Mine Project

Species	Status	Suitable Habitat Present (in analysis area)	Population Present (in analysis area)	Determination of Effects
Western boreal toad (<i>Bufo boreas boreas</i>)	C, S	YES: Riparian areas, streams, wetlands and ponds present, but located greater than 0.5 miles from project site; mitigation included; no confirmed recent sightings in Sierra Madre.	NO	<i>No Impact</i>
Tiger salamander (<i>Ambystoma tigrinum</i>)	S	YES: Riparian areas, streams, wetlands and ponds located greater than 0.5 miles from project site; mitigation included.	LIKELY	<i>No Impact</i>
Northern leopard frog (<i>Rana pipiens</i>)	S	NO: Riparian areas, streams, wetlands and ponds; but no leopard frogs have been recorded in the Sierra Madre or were found in recent surveys.	NO	<i>Dismissed from Detailed Analysis (No Impact)</i>
Wood frog (<i>Rana sylvatica</i>)	S	NO: Riparian areas, streams, wetlands and ponds; but no wood frogs have been recorded in the Sierra Madre or were found in recent surveys.	NO	<i>Dismissed from Detailed Analysis (No Impact)</i>
Colorado River cutthroat trout (<i>Oncorhynchus clarki pleuriticus</i>)	Pet., S,	NO: Project occurs in North Platte drainage where CRCT did not occur.	NO	<i>Dismissed from Detailed Analysis (No Impact)</i>

C= candidate species (warranted but precluded from listing); S = sensitive species; Pet. = petitioned for listing; * = habitat is present within proposed treatment areas or within a 0.32 km (0.2 miles) radius of and adjacent to the proposed treatment areas.

Species with Habitat within the Lost Cabin Mine Analysis Area

Western boreal toad (*Bufo boreas boreas*) and tiger salamander (*Ambystoma tigrinum*) may be present and/or have suitable habitat within or adjacent to the proposed Lost Cabin Mine project area.

Western boreal toad:

This member of the Bufonidae family (true toads) has a range of southern Alaska to northern Baja California; Rocky Mountains to the Pacific Coast, but is absent from most of the arid Southwest. They are found at sea level and at elevations over 3,600m (11,800 ft.). Regionally the Western boreal toad frequents a great variety of habitats at elevations between 2,438m (8,000 ft.) and 3,639m (11,940 ft.), including desert streams, springs, riparian areas, grasslands, woodlands, and mountain meadows, but mostly in and around ponds, lakes, rivers, reservoirs, and streams (Stebbins 1985). They tend to be active between January and October, specifically at night in low-lying areas and diurnally at high elevations. Breeding begins mid-May, continuing into June and July, depending on latitude, elevation, and local conditions. Females attach their eggs to emergent vegetation in pools, ponds or slow moving backwater of streams. Generally, larvae metamorphose into juveniles from late July through early September (Livo 1998).

National Forest System lands represent a large portion of the potential habitat for western boreal toads in the Rocky Mountain West (distribution map in Livo 1998). Boreal toads have been observed in several locations on the Medicine Bow-Routt National Forests in the past. The most recent sightings have been in the Rock Creek, Bird Creek areas on the Laramie Ranger District (late 1990s, WNDD 2000), in the Barrett Creek drainage (Brush Creek/Hayden Ranger District, 2001) and in Colorado portions of the Medicine Bow-Routt. Past surveys have indicated their presence in the Haskins Creek area of the Sierra Madre mountain range (approximately four air miles southeast of Lost Cabin mine), but the current surveys failed to identify any presence. However, current quality habitat remains, especially in the major and tributary drainages within the analysis area. Because boreal toads exist at low densities and disperse rapidly after breeding and metamorphosis, location of adult and juvenile toads is difficult. Individuals may be present within the project area, although they could not be located during surveys. Proposed activities for the Lost Cabin Mine project would not occur in riparian areas, so amphibian habitat would not be affected by most direct mining or ore transportation activities. Project activities as designed and mitigated should not result in any changes of population numbers, habitat quality, or distribution of this species. Mitigation measures are intended to reduce risk of damage to all riparian and wetland areas, including those that provide potential habitat for boreal toads. I have determined that if implemented as designed, including mitigation measures specified in this biological assessment, direct, indirect, and cumulative effects from the Lost Cabin Mine project would have no impact on western boreal toad habitats or populations.

Tiger salamander:

This member of the Ambystomatidae family ranges across North America from coast to coast, and from southern Canada to Puebla, Mexico, but is absent from most of the Great Basin, Pacific coast, Mojave and Colorado deserts. They tend to frequent quiet-water ponds, reservoirs, lakes, temporary rain pools and streams, from arid sagebrush plains to rolling grasslands, mountain meadows, and forests. They can be found between sea level and 3,658 m (12,000 feet) (Stebbins 1985). Adults migrate to breeding ponds shortly after ice melts, and egg laying can occur anytime between mid-March and August. Eggs are attached singly or clusters to submerged vegetation in shallow water. Eggs usually hatch in 2 to 5 weeks. Newly metamorphosed salamanders can often be found under downed logs, rocks, and other surface objects near ponds edge. Adults spend much time underground in the burrows of ground squirrels, gophers, and badgers (Livo 1998).

National Forest System lands represent a smaller portion of the potential habitat for tiger salamanders in the Rocky Mountain West, since they also occur in lower elevation, non-forested areas of grassland, and high desert (distribution map in Livo 1998). Tiger salamanders have not been widely documented on the Medicine Bow-Routt National Forests, but there are records for sightings in the Brush Creek and Fox Creek areas (WNDD 2000). Since tiger salamanders are relatively tolerant of a range of aquatic, riparian and wetland conditions (Livo 1998), they could be expected to occur in those habitats within the Lost Cabin Mine project and analysis areas. Tiger salamanders were found in a variety of lower and higher elevation forested and non-forested habitats during 2001 and 2002 amphibian field surveys (State LEX surveys, Battle Fuels Project surveys). It is likely that they occur in other disjunct riparian and aquatic habitats as well, including those downstream from the proposed mine site. However, proposed activities for the Lost Cabin Mine project would not occur in riparian areas. Project activities as designed and mitigated should not result in any changes of population numbers, habitat quality, or distribution of this species, particularly considering the widespread character of this species. Mitigation measures discussed above are intended to reduce risk of damage to all riparian and wetland areas, including those that provide potential habitat for tiger salamander. I have determined that if implemented as designed, including mitigation measures specified in this document, direct, indirect, and cumulative impacts from the Lost Cabin Mine project would have no impact on tiger salamander habitats or populations.

Determinations of effect in this biological evaluation are based on mitigation measures designed to protect riparian and aquatic ecosystems, including areas that could provide habitat for sensitive amphibians. If project design changes or mitigation measures are not included in the line officer's project decision, revised determinations may be required.

APPENDIX 2, Part 1: Wildlife Biological Evaluation

I. INTRODUCTION

The purpose of this Biological Evaluation is to determine the likely effects of the alternatives on federally listed species (endangered, threatened, and proposed) and Forest Service sensitive species (FSM 2670.31-2670.32).

Section 7 of the Endangered Species Act of 1973, as amended, requires federal agencies to use their authorities to carry out programs to conserve endangered and threatened species, and to insure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of listed or proposed species, or result in the destruction or adverse modification of their critical habitats. A Biological Assessment must be prepared for federal actions that are “major construction activities” (defined under NEPA as a project significantly affecting the quality of the human environment) to evaluate the potential effects of the proposal on listed or proposed species. The contents of the BA are at the discretion of the federal agency, and will depend on the nature of the federal action (50 CFR 402.12(f)).

The Forest Service has established direction in Forest Service Manual 2670 to guide habitat management for Proposed, Endangered, Threatened and Sensitive species (PETS). Preparation of a Biological Evaluation as part of the NEPA process ensures that PETS species receive full consideration in the decision-making process.⁶

II. DESCRIPTION OF THE PROPOSAL

A. Name of Project: Lost Cabin Mine Mineral Exploration

B. Location of Proposed Project

General location: The project area is located within the Sierra Madre Mountain Range on the Medicine Bow–Routt National forest, Brush Creek/Hayden Ranger District, and is approximately 20 air miles south-west of the community of Saratoga. The project area includes the summit of Vulcan Mountain and is also within the Mowry Peak inventoried roadless area, as described in Appendix G to the Final EIS for the Medicine Bow National Forest Land and Resource Management Plan.

Legal description: T. 14N., R. 86 W., Sections 1 and 12.

C. Project Area Features.

Elevation range: The Mowry Peak IRA encompasses approximately 6,241 acres, and ranges in elevation from 9,200 feet to the summit of Vulcan Mountain at 10,784 feet.

General habitat types: The area contains some of the upper drainages of Cow Creek and South Spring Creek. The former drains east and the latter northeast. The vegetation in the area is comprised of 32 percent range types and 68 percent forested types. The forested types include 2,989 acres of spruce-fir and 332 acres of aspen. Range types include 80 acres of meadows and 1,052 acres of rock, cliffs and slopes in excess of 70 percent.

⁶ Standards for preparation and the content of Biological Evaluations are established in the Forest Service Manual (FSM 2672.42). Additional guidance is provided in Region 2 Manual Supplement 2600-94-2.

Management Areas: The Mowry Peak IRA was defined after the implementation of the Medicine Bow Forest Plan. Because of this, the Roadless Area is made up mostly of Management Areas 2A, with lesser amounts of 7E and 4B. Management Area 2A emphasizes semi-primitive motorized recreation opportunities, while 7E emphasizes wood fiber production and 4B emphasizes habitat for management indicator species. The proposed roaded access to the Lost Cabin Mine site occurs on both 2A and 7E management areas.

III. SPECIES CONSIDERED AND THEIR STATUS

In accordance with section 7(c) of the ESA, a list of federally listed and proposed species was developed for this project. Listed, proposed, and candidate species to be included in the analysis are based on a species list received from the USFWS for this project (letter from Michael M. Long to Scott Armentrout, ES-61411, dated 01/11/02) and an updated Threatened and Endangered Species of Carbon County, Wyoming list from USFWS (dated May 15, 2002).

Several other species, which are on the Regional Forester's sensitive species list but are not listed, proposed, or candidates for listing are also included in the analysis. The yellow-billed cuckoo on July 25, 2001 was determined to be warranted for listing, but precluded by higher priority listing actions for the distinct population west of the Continental Divide. This species will be added to the Candidate species list but is not included in this analysis, since the project occurs east of the Continental Divide.

A pre-field review of the analysis area was conducted of available information to assemble occurrence records, describe habitat needs and ecological requirements, and determine whether field surveys were needed to complete the Biological Evaluation. Sources of information included the 2002 Medicine Bow Forest Plan Revision Draft EIS, Wyoming Natural Diversity Database (WNDD, 2001), the Atlas of Birds, Mammals, Reptiles and Amphibians in Wyoming (WGFD, 1999), and District records.

Threatened, endangered, proposed, and sensitive species that are located on the Brush Creek-Hayden Ranger District, and that were considered and selected for detailed evaluation are shown in Table 4. Selected species are those with potential habitat or documented occurrences in the project vicinity. Species dismissed from evaluation are also shown in Table 4, and were generally those outside of any effects of the proposal, either geographically or biologically (e.g., those that have vastly different habitat requirements than those occurring in the project affected area). Note: Amphibian, fish, and plant species are considered in separate biological evaluations.

Table 1 indicates those species carried forward for further analysis. Field surveys were done in the project area in order to further predict effects to species suspected to occur within the area.

No further analysis is needed for species that are not known or suspected to occur in the project area, and for which no suitable habitat is present.

Table 1. Species Carried Forward For Analysis

THREATENED		
Canada Lynx		
Bald Eagle		
SENSITIVE		
Wolverine	Townsend's Big-eared Bat	Olive-sided Flycatcher
Fisher	Dwarf Shrew	Three-toed Woodpecker
Marten	Northern Goshawk	Black-backed Woodpecker
Fringed Myotis	Boreal Owl	Golden-crowned Kinglet

NOTE: See Part 2 for more detailed information.

Direct and Indirect Effects Common to all Threatened and Sensitive Species under all Alternatives

Access to the project area would occur through a previously closed system of National Forest Service Roads (NFSRs) located within the upper reaches of South Heather and Shingle Creeks. Previous timber sales in this area included Calf Creek (late 1950's); Heather Creek burn salvage (late 1960's), Vulcan Mountain (late 1970's), and Teddy Creek (mid to late 1980's). A single gate on NFSR 439 closed the system of NFSRs 439, 431, 431.1A, and 4172 after the Teddy Creek Sale was completed.

While the majority of access would occur on system roads, the last 1.6 miles of access would be via an historic wagon road that accessed the mine site. The 1.6 mile long, historical road, currently has a cleared width of approximately 10-12 feet and a variable tread width of 4-8 feet. The historic road does not cross any springs, streams or wet areas, but does traverse 1 spruce-fir designated old-growth stand. In some spots regeneration has narrowed the cleared width to 6-8 feet. Paths have been cut through blown down logs (with the log ends left in place) numerous times to maintain the tread width. It appears that some paths were cut during the last timber activities in the late '80's. Broken Arrow Mining LCC had permission to use this trail for limited ATV access from 9 August to 30 August 2001 and from 12 June to 7 September 2002. Clearing of down fall to accommodate ATV's also occurred over this time.

Under Alternative 1 a bulldozer would be allowed for limited improvement of the historic road for bobcat access to the mine area and for ATV's to regularly use the historic road. Under Alternative 2, a bulldozer would not be allowed on the historic road. Improvements would be made with a bobcat, for bobcat access to the mine and ATV's to regularly use the historic road. Under Alternative 3, motorized vehicles would not be allowed on the historic road. Access would have to be non-motorized.

Given the current cleared width of 10-12 feet and tread width of 4-6 feet, it is believed that limited clearing and improvement, whether for bobcat, ATV, or pack stock use, will not significantly change or impact the current conditions or character of the old-growth habitat along the historic road.

Cumulative Effects Common to all Threatened and Sensitive Species under all Alternatives

Actual exploratory mining operations would occur across 0.5 acres of an 80-acre mining claim within an alpine meadow complex. These 80 acres straddle Vulcan Peak, its twin peak to the south, and the saddle between the peaks. This complex includes stringers of spruce, subalpine fir, limber pine, small boulder fields, and rock outcrops, and forms the headwaters of South Heather Creek.

Major effects to this headwaters area from previous and current resource activities include; fragmentation of the landscape due to roads, loss of large diameter trees, snags and logs, and livestock grazing.

Mining exploration activities and disturbance to collect surface and subsurface ore samples across the 80 acres of alpine habitat will contribute to the cumulative impacts within the area.

IV. CONSULTATION HISTORY

On October 2, 2002, Steve Loose (District Biologist) had a personal communication with Pat Diebert of US Fish and Wildlife Service (USFWS) to discuss bald eagles. Bald Eagle surveys were completed within the project area during the 2003 nesting season. The project was submitted for formal consultation with the USFWS on April 29, 2003.

V. ANALYSIS OF EFFECTS – FEDERALLY LISTED AND PROPOSED SPECIES

BALD EAGLE (*Haliaeetus leucocephalus*)

Status and Distribution of Species

Outside of Alaska, the bald eagle is listed as “threatened” by the U. S. Fish and Wildlife Service. Breeding populations now exist in all Canadian provinces, all but two states in the United States, and in Mexico.

Wyoming forms part of the core winter/year-round range. The species is a resident breeder in scattered locations throughout the state, but most pairs are in the northwest along the Snake River and in the southeast along the upper North Platte River; the Bighorn, Green, and Wind Rivers also support breeding concentrations. In winter, individuals are widely distributed and may be observed near any large stream or impoundment.

Status and Distribution on the Medicine Bow NF

The lack of large rivers and lakes on the Forest limits use by bald eagles. Winter roosts occur in valleys along larger rivers outside of National Forest land. There is 1 known active nest on Forest on the North Platte River, 1 inactive in the Platte River Wilderness, 1 inactive in the south end of the Sierra Madres, and 1 suspected nest near the Encampment River.

Occurrence in the Project Area

On July 20, 2002, at least one adult and one juvenile bald eagle were seen circling at Silver Lake, 1½ miles southeast of the project area. The juvenile perched in a large tree on the southwest side of the lake for at least ½ hour before flying.

An immature eagle (most likely a bald eagle) was seen on 23 August perched on the western ridge of Vulcan Mountain. When disturbed it circled the area several times. On 11 September another immature (most likely a bald eagle) circled me several times and then soared out of sight while I was east of and below the saddle of the two peaks.

Habitat

Bald eagles are seldom seen far away from water, seacoasts, lakes, or rivers. Eagles require large diameter trees for roosting, perching, and nesting. Breeding requires a readily available food source of moderate to large fish, large diameter trees, and minimal disturbance from humans. Carrion use is an important food source for eagles during the winter months. The nesting season typically begins in April, and lasts through July. Sexual maturity is usually reached at 5 years of age. Bald eagles lay from one to four eggs.

Threats from Human Activity

Bald eagles are susceptible to disturbance at nest sites, though individual pairs vary greatly in their tolerance of human activity. New sources of disturbance or increased disturbance at existing nesting sites are the primary concerns: eagles that nest repeatedly at sites of high existing recreation are assumed to tolerate disturbance.

Vulnerability to Forest Service Management Activities

The Medicine Bow NF has few lakes and rivers large enough to provide foraging habitat for bald eagles. The few sites are heavily used for recreation. Motorized access to the lakes increases disturbance and vulnerability to deliberate illegal killing.

Loss of large trees and snags within ¼ mile of rivers and lakes has reduced perches for foraging areas and nest sites.

Environmental Consequences and Viability

No viable population now exists on the planning area. The bald eagles that use the Medicine Bow NF are a small part of a larger population.

Evaluation criteria are protection from disturbance at nest sites and retention of large trees within ¼ mile of rivers and lakes (Department of Agriculture 2002).

Environmental Baseline

Breeding habitat most commonly includes areas within 2.5 miles of rivers, lakes, or other bodies of water. Potential nesting habitat occurs at South Spring Creek Lake (approximately 1½ air miles west of Vulcan Mountain), Silver Lake (approximately 2 miles southeast of Vulcan Mountain), and Cow Creek Reservoir (approximately 2½ miles east-southeast of Vulcan Mountain).

Forest Plan standards and guidelines (III-31) state "no activities shall be allowed within one mile of an active bald eagle nest... from February 1 to July 31 if they would cause nesting failure or abandonment. No activities shall be allowed within one half mile of an active bald eagle ...nest at any time if they would cause disturbance of the adult birds on the nest".

Effects Analysis

Direct and Indirect Effects (all alternatives)

Exploratory mining activities across the 80-acre claim site atop Vulcan Mountain could disturb potential nest sites at South Spring Creek Lake, Silver Lake, or Cow Creek Reservoir.

Clearing of the historical wagon road will provide a cleared snowmobile route into the Roadless Area for the 5 years of activity. This provides a disturbance potential from snowmobiles in the Vulcan Mountain area during courtship and nest site selection periods.

Cumulative Effects

Potential site disturbance would occur for the 5 years of exploration, from 2003 –2008.

CANADA LYNX (*Lynx Canadensis*)

Status and Distribution of Species

In 1998, a cooperative effort between the Colorado Division of Wildlife (CDOW), the Forest Service, the U.S. Fish and Wildlife Service, the BLM, and the National Park Service developed a draft reintroduction conservation strategy for the Canada lynx. During 1999 and 2000, 96 lynx were introduced to augment the existing small population in Colorado.

Status and Distribution on the Medicine Bow NF

A few lynx have been sighted in recent years on the Medicine Bow NF. The increase in recent sightings suggests that individuals from the Colorado reintroductions are wandering north, and could provide the basis of a future breeding population.

There is no reliable information on the occurrence of lynx on the Forest in the past. Wyoming trapping data from early in the century often reported as "lynx cat" both lynx and bobcats, so it is not possible to distinguish between the species. It is probable that lynx populations on the fringes of the range (like the Medicine Bow NF) grew and shrank with conditions that affected the contiguous population in Colorado.

Habitat

Lynx are temperate forest dwelling carnivores. In the southern Rocky Mountains, lynx are predominately found above 8,000 feet, in Engelmann spruce, subalpine fir, and lodgepole pine forests. Lynx require late-successional forest with high amounts of dead and down large woody material used as denning habitat.

Lynx females typically select dense, mature forest habitats that contain large woody debris, such as fallen trees or upturned stumps, to provide security and thermal cover for kittens. Overhead cover and structure maybe the two most important factors in lynx denning habitat.

Lynx avoid large openings in the forest canopy (greater than 100 meters) and normally use coniferous or deciduous vegetation less than 2 meters in height with a closed canopy for traveling. Roads may increase the vulnerability of lynx to hunters and trappers, as well as increase the chances of road deaths. Some studies show that lynx frequently travel on roads, while other studies have indicated the opposite (Department of Agriculture 2002).

There are approximately 306,400 acres of lynx habitat on the Medicine Bow NF, all in the Medicine Bow Range and the Sierra Madre. This acreage includes winter forage (snowshoe hare habitat), denning, willow, high-elevation sagebrush, and low quality habitat (Department of Agriculture 2002).

Threats from Human Activity

Grazing of livestock and increase in elk populations creates competition for forage with lynx prey, especially hares and rabbits. Competition with other predators (especially coyotes and bobcats) may be increased at high elevation in winter by compaction of snow by human activities such as snowmobiling. The lynx's competitive advantage over other carnivores is its ability to run and hunt on deep, uncrusted snow, where its extremely large feet provide a large surface area to support its weight.

Lynx may be killed by vehicular traffic, other predators (like mountain lions), shooting, and as non-target species in predator control and commercial fur trapping. Development of residential areas, ski areas, and highways further fragments the naturally patchy habitat of the Southern Rockies. Effects of loss of connectivity include restricted gene flow and increased mortality risks to animals moving between patches.

Vulnerability to Forest Service Management Activities

Actions that may affect lynx populations and habitat include timber management, fire management, recreation, livestock grazing, utility corridors, and residential, commercial and agricultural developments, such as housing, ski areas and large resorts. These actions may affect one or more of the primary habitat needs of the species.

Loss of habitat, including denning, dispersal (connectivity), and foraging (mainly winter habitat for the snowshoe hare).

Loss of competitive advantage over other predators (like bobcats and coyotes) in deep snow resulting from snow compaction by snowmobiles, other vehicles, skiers, and plowing of roads (for example, to provide access to private land or for winter logging).

Disturbance at certain times of the year so that lynx use of habitat may be limited, especially at and near denning habitat. In other settings, lynx seem to be little disturbed by human activity.

Thinning of young stands of lodgepole and spruce-fir to enhance growth for timber production.

Trapping may have been a factor in the initial decline of lynx in the Southern Rockies. Trapping of lynx is now illegal in Wyoming, but some lynx may be caught in traps set for other species, especially bobcat. In Montana, lynx caught in leghold traps and released wearing radio collars had lower survival than those trapped in other ways. The need for agility and speed in hunting hares, combined with their rather delicate long legs, make them vulnerable to starvation following even minor leg injury.

Environmental Consequences and Viability

Lynx are not known to breed on the Medicine Bow NF. The few sightings may be transients from Colorado. The small population makes them vulnerable to local extinction, should a population start to be established.

Environmental Baseline

Models for mapping lynx denning and foraging habitat were developed, using habitat definitions and descriptions contained in the Lynx Conservation Assessment and Strategy (LCAS, Ruediger et al. 2000).

Lynx habitat is mapped within Lynx Analysis Units (LAU's). The proposed Lost Cabin Mine project occurs in the 48,078-acre Upper Sierra Madre LAU. Based on models developed for lynx habitat as described above, there currently are 10,857 acres of potential winter foraging habitat; 8,849 acres of potential denning habitat; and 1,955 acres of currently, structurally unsuitable habitat.

Under all alternatives, no loss of denning or foraging habitat would occur. The 80-acre claim site does not contain suitable denning or winter hunting habitat, nor does it contain enough cover to function as a lynx travel way between drainages. Limited development (clearing paths of down fall, water bars etc) of the historical wagon road would need to occur under all alternatives, motorized or not. However, this limited clearing will not significantly alter the current habitat.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Further development of the historical wagon road in the affected area can be expected to affect lynx habitat by allowing increased human summer and winter access into the security of the roadless area denning habitat. Lynx are sensitive to human presence during the denning period when raising kittens.

Clearing of the historical wagon road will provide a cleared snowmobile route into the roadless area for the 5 years of activity. As with the fisher, marten, and wolverine, other competitors can move in as roads are developed into the upper elevations. A cleared snowmobile route also increases chances of accidental trapping of lynx through trapping for bobcat.

Cumulative Effects

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. These mine exploration activities are not expected to directly affect lynx activities, but do provide seasonally chronic though relatively low disturbance.

Determination of Effect and Rationale

For Bald Eagle, based on the following:

- There would be no loss of trees or snags within ¼ mile of rivers or lakes.
- Nesting surveys were completed for 2003 and no eagle nests were located..

A "**May affect, not likely to adversely affect**" determination is made.

For Canada Lynx, based on the following:

- No timber management activities will occur.
- No known concentrated recreational use.
- No effects to landscape connectivity.
- No new road construction.
- No plowed or created snow roads.
- No winter mining activities.
- Claimants to have gated access, closed road system not open to general public.
- Upon project completion historic way will be reclaimed (brushed in).

A "**May affect, not likely to adversely affect**" determination is made.

Table 2. Summary of the Determinations of Effects for Federally Listed Species

Common Name	Scientific Name	Status	Determinations of Effects			
			Alt 1	Alt 2	Alt 3	Alt 4
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened	NLAA	NLAA	NLAA	NLAA
Canada Lynx	<i>Lynx canadensis</i>	Threatened	NLAA	NLAA	NLAA	NLAA

The following wording is used for federally listed threatened and endangered species:

- “*No effect*” -- where no effect is expected.
- “*May affect, not likely to adversely affect*” -- where effects are expected to be insignificant (immeasurable) or discountable (extremely unlikely). (NLAA)
- “*May beneficially affect*” -- where effects are expected to be beneficial, and no negative effects are expected to occur.
- “*May affect, likely to adversely affect*” -- where effects are expected to be adverse or detrimental.

US Fish and Wildlife Service Concurrence

In compliance with Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.), this project was submitted for formal consultation with the US Fish and Wildlife Service on April 29, 2003. The final Biological Opinion, received on October 21, 2003, confirmed that the “mineral exploration is not likely to jeopardize the continued existence of the Canada lynx. No critical habitat has been designated for this species, therefore, none will be affected. The impact to habitat for Canada lynx would be insignificant or discountable. We concur with your “may effect, but not likely to adversely affect” determination for the bald eagle.”

VI. ANALYSIS OF EFFECTS – SENSITIVE SPECIES

Existing Conditions

Direct and Indirect Effects

In accordance with FSM, a determination must be made as to the degree of impact the activities proposed might have on sensitive species. The following factors were considered in making the determination on the potential effects of implementing the proposed project on sensitive species:

- An existing (albeit closed) road network
- An existing historical wagon road
- The scale of the project
- The existing road closure would be maintained
- Limited clearing and repairs of the historical wagon road would be undertaken
- Limited work party of 2-4 people at any one time
- Potential increase in snowmobile use

Cumulative Effects

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time.

Clearing of the historical wagon road will provide a cleared snowmobile route into the roadless area for the 5 years of activity.

Determination of Effect and Rationale

Table 3. Summary of Determination of Effects for Sensitive Species

Common Name	Scientific Name	Status	Determination of Effects Under All Alternatives ¹
Wolverine	<i>Gulo gulo luscus</i>	S	MAII
Fisher	<i>Martes pennanti</i>	S	MAII
Marten	<i>Martes americana</i>	S	MAII
Fringed Myotis	<i>Myotis thysanodes</i>	S	MAII
Townsend's big-eared bat	<i>Plecotus townsendii</i>	S	MAII
Dwarf shrew	<i>Sorex nanus</i>	S	MAII
Northern goshawk	<i>Accipiter gentiles</i>	S	MAII
Boreal owl	<i>Aegolius funereus</i>	S	MAII
Olive-sided flycatcher	<i>Contopus cooperi</i>	S	MAII
Three-toed woodpecker	<i>Picoides tridactylus</i>	S	MAII
Black-backed woodpecker	<i>Picoides arcticus</i>	S	MAII
Golden-crowned kinglet	<i>Regulus satrapa</i>	S	MAII

¹ The following wording is used for species listed as sensitive species by the Regional Forester:

- “**No impact**” -- where no effect is expected.
- “**Beneficial impact**” -- where effects are expected to be beneficial, and no negative effects are expected to occur.
- “**May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species viability range wide**” -- where effects are expected to be insignificant (immeasurable) or discountable (extremely unlikely). (MAII)
- “**Likely to result in a loss of viability on the Planning Area, in a trend to federal listing, or in a loss of species viability range wide**” - where effects are expected to be detrimental and substantial.

Neotropical Migratory Birds

A recent executive order (dated 1/11/01) directs Federal agencies to protect migratory birds. A following Memorandum of Understanding (MOU) between the USFS and USFWS (dated 1/16/01) was developed to complement and implement this executive order in a collaborative effort between the two agencies. The EO and MOU have been reviewed. This analysis and project are consistent with criteria in these documents for protection of migratory birds. Some of the migratory birds likely to occur in the area are included in the Biological Evaluation analysis. The chance for any intentional or unintentional take of any migratory bird is extremely minimal.

VII. RECOMMENDED MEASURES TO AVOID, MINIMIZE, OR MITIGATE ADVERSE EFFECTS

The following items are not included as part of the proposed action being evaluated, and the determinations stated above are not affected by these recommendations.

Wildlife

- Conduct bald eagle survey.
- Conduct goshawk survey.
- Conduct winter snow track surveys for marten, fisher, wolverine, and lynx.
- If snags (3-4 foot DBH spruce snags) need to be dropped along historic road 4170 H, employ professional faller to directional fall in such a way as to most benefit wildlife (create piles for denning).
- Check snags for sensitive species denning, cavity nesting, or roosting activity prior to felling (marten, boreal owl).
- Employ clean camping methods and food storage due to potential bear activity in upper South Heather Creek.
- No firearms or hunting should be permitted while conducting mining activities.
- Mining parties wanting to hunt this area must move camp activities and vehicles outside gated closure area and hunt without motorized access.
- Collect firewood outside the road 439-closure area unless otherwise designated.

Road Use

- Monitor gate closure on FS 439 road system. Gated access should only be available for employees and activities directly related to mineral exploration activities.
- Recommend activity begin no sooner than spring road firmness and end no later than fall road firmness and not fall between bow season and rifle season.
- Proposed action does not mention any need for snow plowing for spring access. The historic road has a south aspect and will probably melt out last. If plowing is needed this will have to be analyzed for effects.
- Sign to public as to why road activity is occurring.
- Road reconstruction of historic road 4170 H is strictly for mining purposes and will not be open for public use.
- Historic road should be obliterated or returned to trail only use at end of 5-year operation period.
- Currently 4-wheelers are accessing closed road 431.1A via 434. This access has been closed several times by the Forest Service. Provide an effective closure for this road.
- Post closure sign.

- Drop trees cross-wise up the road (if trees are present).
- (The Teddy Creek Project Transportation Analysis dated June 1984 does not show NFSR 431.1A connecting to NFSR 434. Historically, this connection existed with a culvert across South Heather Creek. Currently this is not a legal open cut across with the culvert removed and being blocked with a berm. However, 4-wheeler tracks were observed, in October of 2002, over the berm traveling up the 431.1A road accessing some portion of this closed area.)

VIII. RESPONSIBILITY FOR A REVISED BIOLOGICAL EVALUATION

This Biological Evaluation was prepared based on presently available information. If the action is modified in a manner that causes effects not considered, or if new information becomes available that reveals that the action may impact endangered, threatened, proposed, or sensitive species that in a manner or to an extent not previously considered, a new or revised Biological Evaluation will be required.

IX. LITERATURE CITED

Department of Agriculture. 2002. Medicine Bow National Forest Land and Resource Management Plan, Draft Environmental Impact Statement, Appendix I. USDA Forest Service, Laramie, Wyoming

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Powell, R.A., and W.J. Zielinski. 1994. Fisher. In Ruggiero, L.F. et al. The Scientific Basis for Conserving Forest Carnivores, American Marten, Fisher, Lynx, and Wolverine in the Western United States. 184 pp. USDA Forest Service. Gen. Tech. Rep. RM-254.

Scholl, S. and R. S. Smith. 2001. Medicine Bow National Forest: Known occurrences of Threatened, Endangered, Forest Sensitive and WYNDD-designated Plant and Animal Species of Concern and Community Occurrences. 503 pp. Wyoming Natural Diversity Database, P.O. Box 3381, Laramie, Wyoming. 82071-3381.

APPENDIX 2, Part 2: Sensitive Species Existing Situation/Effects Analysis

WOLVERINE

Existing Situation

Scattered sightings of wolverine have been reported in the Sierra Madre, Medicine Bow Range, and adjacent Colorado. There are few reliable sightings of wolverine in southeastern Wyoming or in adjacent Colorado. There are no known documented occurrences of wolverine within the project area. The Mowry Peak Roadless area does provide a relatively large and undisturbed core area that includes a diverse array of potential foraging habitat (e.g., riparian, forest, and alpine meadows) and denning habitat (e.g., old growth stands with accumulations of down logs and patches of alpine boulder fields). The requested access route to the mining claim has been closed by gate for approximately 10 years. Currently snowmobile activity in the area is low.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Limited development (clearing of down fall, water bars, etc.) of the historical wagon road would need to occur under all alternatives, motorized or not. Further development of the historical wagon road in the affected area can be expected to affect wolverine habitat by allowing increased human summer and winter access into the security of the roadless area. Wolverines are sensitive to human presence during the denning period (February through April) when raising kits. Human activities at relatively low levels can cause wolverine abandonment of den sites and possible long-term displacement from these habitats if the activities are persistent. If displacement were to occur, it would likely be southeast to the Bridger Peak IRA.

Cumulative Effects (all alternatives)

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. Mine exploration activities are not expected to affect wolverine feeding or cover requirements, but exploration does provide seasonal though relatively low disturbance.

Disturbances from winter activities pose a much greater concern for wolverine. Clearing of the historical wagon road will provide a cleared snowmobile route into the roadless area for the 5 years of activity. As with the fisher, marten, and lynx, other competitors can move in as roads are developed into the upper elevations and used for snowmobiling.

Determination

For wolverine, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

FISHER

Existing Situation

Fishers have a boreal distribution with southern extensions along major mountain ranges. The species is at the edge of its range in Region 2 and Wyoming. Fisher's have been documented in the Snowy and Sierra Madre ranges, but these may be from animals transplanted by humans to these sites (Scholl and Smith 2001).

Effects Analysis

Direct and Indirect Effects (all alternatives)

Management, especially related to forest fragmentation, down woody material, and riparian management can directly affect habitat of this species. Project impacts to these resources will be minimal to non-existent. Individual forest components potentially used for denning and resting (large trees, snags, and logs) and as prey habitat may be altered somewhat (cut and/or moved, but not removed from the site) through the improvement and maintenance along the historic wagon road.

Increased road access is thought to be detrimental to fisher from two primary factors; 1) increased competition from other predators; 2) increased vulnerability to trapping.

Road networks can provide routes of easy travel for potential fisher competitors including coyote, bobcat, lynx, and cougar. For example, winter snowmobiling on roads packs snow, which permits coyotes to move into areas where their travel might otherwise be restricted. Competitors may reduce available prey for fisher, displace fisher from areas, or result in direct mortality (predation).

The fisher is not designated a furbearer by the Wyoming Game and Fish Dept. However, fishers are easily trapped, and are frequently caught in trap sets for other furbearers, especially for bobcats, foxes, and coyotes (Powell and Zielinski 1994). Vulnerability to trapping mortality, whether direct or incidental, can increase as road access is developed. Currently snowmobile activity in the area is low; however, clearing of the historical wagon road will provide a cleared snowmobile route into the roadless area.

Cumulative Effects (all alternatives)

Same as for wolverine.

Determination

For fisher, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

MARTEN

Existing Situation

The marten is a designated furbearer by the Wyoming Game and Fish Department. The marten occurs at low densities in subalpine forests of all major mountain ranges in Wyoming, with the exception of the Laramie Mountains. Martens are common in the Medicine Bow Range and the Sierra Madre. Marten home ranges on the Medicine Bow NF are reported as being larger than those in other studies. This may reflect limitations on productivity, reduced prey density, or lack of key habitat features such as mature forest, downed logs, or snags.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Marten dens are commonly located in live tree, log or snag cavities, areas of concentrated down fall, rock piles, or abandoned burrows. Project impacts to these resources will be minimal to non-existent. Individual forest components potentially used for denning and resting (large trees, snags, and logs) and as prey habitat may be altered somewhat (cut and/or moved, but not removed from the site) through the improvement and maintenance along the historic wagon road.

Compaction of snow through snowmobile use may allow larger competitors to compete for prey or kill marten, similar to fisher and wolverine.

Trapping is a continuous source of mortality, and could increase with improvement of the historic wagon road.

Cumulative Effects (all alternatives)

Same as for wolverine.

Determination

For marten, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

FRINGED MYOTIS

Existing Situation

While never abundant, fringed myotis are widespread in western U.S. from southern Canada to Mexico. There is little information on occurrence or on location of sensitive sites on the Medicine Bow NF. Night, day, and maternity roosts may occur in caves, mines, and buildings that are not heavily disturbed by human presence. Fringed myotis seem easily disturbed by human presence. Roosting sites are potentially vulnerable to human disturbance.

Within the affected area, potential roosting sites occur in the historical abandoned mining cabin. The affected area also contains a collapsed pit adjacent to the cabin and an approximate 4-foot by 3-foot by 8-foot deep shaft south of the cabin. Neither of these two pits appears to offer suitable roosting sites.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Although the historic mining cabin would not be used by the claimants during project activities, mining operations would include repairing and reentering the pit and shaft.

Cumulative Effects (all alternatives)

While the cabin would not be used by the claimants, it is located adjacent to a site of proposed mining exploration/activity. These activities could occur from June through October over a period of five years. Such human and ground disturbing activity may preclude any bat roosting use within the cabin for these 5 years.

Determination

For fringed myotis, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

TOWNSEND'S BIG-EARED BAT

Existing Situation

The Townsend's big-eared bat has been recorded on the MBNF by the Wyoming Game and Fish Department. Little information is available on locations of caves or mines used for day or night roosts, maternal colonies, or hibernacula. Roost sites typically include caves and mines, but also, infrequently, abandoned buildings. Tree cavities or hollow trees may be used occasionally by this species for daytime roosting. Townsend's big-eared bat is very vulnerable to disturbance at roosting sites.

Within the affected area, potential roosting sites occur within the historical abandoned mining cabin. The affected area also contains a collapsed pit adjacent to the cabin and an approximate 4-foot by 3-foot by 8-foot deep shaft south of the cabin. Neither of these two pits appears to offer suitable roosting sites.

Potential daytime roosting sites (tree cavities or hollow trees) occur within the old-growth stands traversed by the historic wagon trail.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Although the historic mining cabin would not be used by the claimants during project activities, mining operations would include repairing and reentering the pit and shaft.

A minimal number of hollow trees or trees with cavities that could be potentially used for day time roosting habitat may be felled through the improvement and maintenance along the historic wagon road.

Cumulative Effects (all alternatives)

While the cabin would not be used by the claimants, it is located adjacent to a site of proposed mining exploration/activity. These activities could occur from June through October over a period of five years. Such human and ground disturbing activity may preclude any bat roosting use within the cabin for these 5 years.

Determination

For Townsend's big-eared bat, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

DWARF SHREW

Existing Situation

The dwarf shrew occurs in the Sierra Madre and Medicine Bow Ranges. Not enough information is available to assess population or trends. The apparent rarity of the species may be due to under-sampling as they are difficult to detect (Scholl and Smith 2001). While the dwarf shrew may be found across a broad range of lower elevation forest, shrub, and grassland, some studies show an affinity for talus slopes and outcrops of broken rock. Habitat use and habitat quality are poorly understood. It is difficult to make management recommendations because so little is known about the habitat requirements and life history. This species is active throughout the year and is an active hunter feeding primarily on insects, spiders, and other small invertebrates (i.e., worms, mollusks, centipedes).

Effects Analysis

Direct and Indirect Effects (all alternatives)

Mining operations may destroy talus and broken rock out-crop habitats. Improvement of the historic wagon road may lead to disturbance of subnivean habitat in the form of down logs and woody debris, but this habitat would not be removed from the site. The improvement of the historic road could lead to more alpine snowmobile use, which, in turn, could lead to loss of subnivean winter habitat due to snow compaction.

Cumulative Effects (all alternatives)

Mining activities could occur from June through October over a period of five years. Such ground disturbing activity over the 5-year period could lead to localized losses. However, only small areas (5 acres) are necessary to support viable populations (Scholl and Smith 2001).

Determination

For dwarf shrew, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

NORTHERN GOSHAWK

Existing Situation

On the Brush Creek/Hayden Ranger District, goshawks are typically located between 7,500-9,000 feet elevation. The project area ranges in elevation from 9,200 feet to the summit of Vulcan Mountain at 10,784 feet. Goshawk surveys were conducted in the watershed in 1992, and 1996 through 1998. Goshawk nests were recorded for the foothills region of South Spring Creek, North Heather Creek, and Shingle Creek. There are no records of goshawks within the project area.

Field surveys were conducted within the area of the proposed action beginning in August 2002. However, surveys occurred too late to appropriately identify nesting activities. On 23 August 2002, a goshawk on the 431 Road approximately ¼ mile above the gate was observed. Forest Plan standards and guidelines (III-31) state "No activities shall be allowed within one quarter mile of an active ...goshawk...nest from March 1 to July 31 if they would cause nesting failure or abandonment."

Effects Analysis

Direct and Indirect Effects (all alternatives)

Given the elevation range, the proposed project is not expected to have any direct effects on goshawks. Season access of the closed road 439 may affect goshawks if they are nesting near that road. Goshawk surveys will continue through the life of the project.

Cumulative Effects (all alternatives)

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. Mine exploration activities are not expected to affect goshawk nesting, feeding, or prey requirements, but do provide seasonal though relatively low disturbance along the historic wagon road.

Determination

For goshawk, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

BOREAL OWL**Existing Situation**

Boreal owls are widespread at low densities in boreal and subalpine forests across North America. Boreal owls are yearlong residents and known to breed on the Laramie, Medicine Bow, and Sierra Madre Ranges.

Effects AnalysisDirect and Indirect Effects (all alternatives)

Boreal owls are thought to be limited on the MBNF by the abundance of large snags with cavities, by the amount of old forest with complex structures, and possibly by prey density (Department of Agriculture 2002).

Project impacts to these resources will be minimal to non-existent. Individual forest components potentially used for nesting and roosting and as prey habitat (large trees, snags, and logs) may be altered somewhat (cut and/or moved, but not removed from the site) through the improvement and maintenance along the historic wagon road.

Cumulative Effects (all alternatives)

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. Mine exploration activities are not expected to affect boreal owl nesting, feeding or prey requirements, but do provide seasonal though relatively low disturbance along the historic wagon road.

Determination

For boreal owl, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

OLIVE-SIDED FLYCATCHER**Existing Situation**

The olive-sided flycatcher is a widespread breeding bird in spruce-fir forests of Canada, Alaska, and the mountains of the western U.S. Breeding Bird Survey data indicate a range-wide population decline of 70% since 1966. The species is associated with older spruce-fir forest with abundant snags that are used as a perch for hawking insects. Olive-sided flycatchers prefer edges and openings with scattered trees.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Project impacts to snags will be minimal. Snags may be felled through the improvement and maintenance along the historic wagon road.

Cumulative Effects (all alternatives)

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. Mine exploration activities are not expected to affect olive-sided flycatcher nesting, feeding or prey requirements, but does provide seasonally chronic though relatively low disturbance along the historic wagon road.

Determination

For olive-sided flycatcher, the proposed action "**May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide.**"

THREE-TOED WOODPECKER

Existing Situation

Three-toed woodpeckers are widespread at low densities in boreal and subalpine forests across North America. Three-toeds are yearlong residents and known to breed on the MBNF. Primary threats to three-toeds are removal of snags and old forest habitat used for cavity nesting and feeding habitat.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Project impacts to snags will be minimal. Snags may be felled through the improvement and maintenance along the historic wagon road.

Cumulative Effects (all alternatives)

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. Mine exploration activities are not expected to affect three-toed nesting, feeding or prey requirements, but do provide seasonal though relatively low disturbance along the historic wagon road.

Determination

For the three-toed woodpecker, the proposed action "**May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide.**"

BLACK-BACKED WOODPECKER

Existing Situation

Black-backed woodpeckers are widespread at low densities in coniferous forests across North America. The species is very uncommon on the MBNF but there may be a dispersed inconspicuous population. Black-backs specialize on wood-boring beetle larvae as compared to bark beetle larvae. Primary threats to black-backs are removal of snags and old forest habitat used for cavity nesting and feeding habitat.

Effects Analysis

Direct and Indirect Effects (all alternatives)

Project impacts to snags will be minimal. Snags may be felled through the improvement and maintenance along the historic wagon road.

Cumulative Effects (all alternatives)

Disturbances related to motorized or non-motorized access and mining exploration activities are to occur seasonally for 5 years. These activities would occur between June and October. Between 2 and 4 people would be working the site at any given time. Mine exploration activities are not expected to affect three-toed nesting, feeding or prey requirements, but do provide seasonal though relatively low disturbance along the historic wagon road.

Determination

For the black-backed woodpecker, the proposed action "**May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide.**"

GOLDEN-CROWNED KINGLET

Existing Situation

Golden-crowned kinglets are widespread in North America, breeding in boreal forests from Alaska south in mountains of the U.S. to just north of Mexico. Golden-crowned kinglets are winter residents across the U.S. Golden-crowned kinglets are abundant and nest in subalpine coniferous forests across the MBNF. Kinglets are the smallest passerine bird, with high energetic demands. Availability of roost sites, such as tree cavities are critical in winter months. It is believed that the primary threat to golden-crowned kinglets is fragmentation of mature spruce-fir forest and/or loss of winter cavity roosting habitat.

Effects Analysis

Direct and Indirect Effects (all alternatives)

No fragmentation of spruce-fir forest will occur from this project. The cleared width of the existing historic wagon road is to not be changed. Individual snags may need to be felled for safety purposes. This will not affect fragmentation concerns but may cause limited loss of winter cavity roosting habitat.

Cumulative Effects (all alternatives)

Mine exploration activities are not expected to affect kinglet nesting, feeding or prey requirements, but do provide seasonal though relatively low disturbance along the historic wagon road.

Determination

For the golden-crowned kinglet, the proposed action **"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species liability range-wide."**

Table 4 lists those Region 2 sensitive species that were selected or eliminated from detailed analysis by a combination of pre-field review and field reconnaissance. The reason each species was eliminated is documented within the table and is summarized by the following six categories:

The project proposal is outside of the known range of the species and/or the species is not likely to occur.

1. Habitat used by the species is different than that being disturbed by the project proposal.
2. Disturbance to habitat is marginal, very small in size and/or length of time, thus unlikely to affect species.
3. Species is associated with Platte River water depletions and the project proposal does not affect Platte River water supply.
4. Timing of the project proposal is such that it will not affect species.
5. There are no documented records of species occurrence, habitat is marginal, and the species is unlikely to be present in the project area.

Table 4. Species Selected or Eliminated from Detailed Analysis

Species	Status	Known/suspected to be present in project area	Suitable habitat present in project area	Carried forward for Analysis	Reason eliminated from further review (see above)
Black-footed ferret (<i>Mustela nigripes</i>)	E	No	No	No	1
Whooping crane (<i>Grus americana</i>)	E	No	No	No	2
Canada lynx (<i>Lynx canadensis</i>)	T	Possible	Yes	Yes	
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	T	No	No	No	1
Bald eagle (<i>Haliaeetus leucocephalus</i>)	T	Yes	Yes	Yes	
Mountain plover (<i>Charadrius montanus</i>)	P	No	No	No	2
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	C, S	No	No	No	1
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	C, S	No	No	No	1
Wolverine (<i>Gulo gulo luscus</i>)	S	Possible	Yes	Yes	
Fisher (<i>Martes pennanti</i>)	S	Possible	Yes	Yes	
Marten (<i>Martes americana</i>)	S	Yes	Yes	Yes	
Fringed Myotis (<i>Myotis thysanodes</i>)	S	Possible	Yes	Yes	
Townsend's big-eared bat (<i>Plecotus townsendii pallencens</i>)	S	Possible	Potentially	Yes	
Pygmy shrew (<i>Sorex hoyi montanus</i>)	S	No	Potentially	No	2--no disturbance to springs, streams, bogs, or wet areas.

Species	Status	Known/suspected to be present in project area	Suitable habitat present in project area	Carried forward for Analysis	Reason eliminated from further review (see above)
Dwarf shrew (<i>Sorex nanus</i>)	S	Possible	Yes	Yes	
Northern goshawk (<i>Accipiter gentiles</i>)	S	Yes	Yes	Yes	
Boreal owl (<i>Aegolius funereus</i>)	S	Yes	Yes	Yes	
Ferruginous hawk (<i>Buteo regalis</i>)	S	No	No	No	2
Western snowy plover (<i>Charadrius alexandrinus</i>)	S	No	No	No	2
Black tern (<i>Chlidonias niger</i>)	S	No	No	No	2
Olive-sided flycatcher (<i>Contopus borealis</i>)	S	Possible	Yes	Yes	
Black swift (<i>Cypseloides niger</i>)	S	No	No	No	2
Merlin (<i>Falco columbarius</i>)	S	No	No	No	2
Peregrine falcon (<i>Falco peregrinus</i>)	S	No	No	No	2
Greater sandhill crane (<i>Grus canadensis</i>)	S	No	No	No	2
Loggerhead shrike (<i>Lanius ludovicianus</i>)	S	No	No	No	2
Long-billed curlew (<i>Numenius americanus</i>)	S	No	No	No	2
Osprey (<i>Pandion haliaetus</i>)	S	No	No	No	2
Fox sparrow (<i>Passerella iliaca</i>)	S	No	No	No	2
Three-toed woodpecker (<i>Picoides tridactylus</i>)	S	Yes	Yes	Yes	

Species	Status	Known/suspected to be present in project area	Suitable habitat present in project area	Carried forward for Analysis	Reason eliminated from further review (see above)
Black-backed woodpecker (<i>Picoides arcticus</i>)	S	Possible	Yes	Yes	
White-faced ibis (<i>Plegadis chihi</i>)	S	No	No	No	2
Golden-crowned kinglet (<i>Regulus satrapa</i>)	S	Yes	Yes	Yes	
Columbian sharp-tailed grouse (<i>Tympanuchus phasianellus columbianus</i>)	S	No	No	No	2

Table 5. Threatened, Endangered, Proposed, and Sensitive Species occurring on the Medicine Bow–Routt National Forests

Species	Status	Expected Occurrence Relative to Medicine Bow-Routt National Forest
Black-footed ferret (<i>Mustela nigripes</i>)	E	Potential resident in prairie dog colonies. Historically, this species occupied all the non-mountainous areas in Wyoming, including Carbon County. No current populations are known to exist naturally in the wild. An experimental population of ferrets has been reintroduced into the Shirley Basin in central Wyoming. The only historic ferret sightings for the Medicine Bow National Forest are from Thunder Basin National Grassland, which is being considered as a reintroduction site.
Whooping crane (<i>Grus americana</i>)	E	Resident or migrant in experimental Rocky Mountain population. Wet-moist meadow grasslands, sedge meadows, irrigated native and introduced meadows, small grains, and marshes.
Canada lynx (<i>Lynx canadensis</i>)	T	Potential habitat and resident of Southern Rocky Mountain Geographic Area forests. Dense coniferous forests. Dens on the ground in dense downfall.
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	T	Riparian habitats east of Laramie Mountains and south of the North Platte River. Nests in a burrow.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	T	Nesting, winter resident, and migrant on NFS lands, primarily associated with Platte River main stem but also large lakes. Nests in a tree.
Mountain plover (<i>Charadrius montanus</i>)	P	Grasslands statewide. This species generally avoids mountainous areas and prefers short-grass prairie. Nests on the ground, somewhat exposed.
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	C, S	Grasslands generally east of the Continental Divide. Nests in a burrow.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	C, S	Recent 12-month finding for a petition to list the distinct population segment west of the Continental Divide was warranted, but precluded by higher priority listing actions. Generally found in cottonwood riparian areas below 7,000 feet. Nests usually in a shrub.
Wolverine (<i>Gulo gulo luscus</i>)	S	Coniferous forests, especially dense, continuous stands in remote areas. Often in proximity to rocky areas such as talus slopes or boulder fields which provide den sites.
Fisher (<i>Martes pennanti</i>)	S	Wet deciduous-coniferous forests with large overstory trees, closed overhead canopies, and dense understories. Nests in a hole, either naturally occurring or one made by another animal.

Species	Status	Expected Occurrence Relative to Medicine Bow-Routt National Forest
Marten (<i>Martes americana</i>)	S	Late successional stands of mesic, conifer-dominated forest, preferably spruce-fir, but also lodgepole pine. Considered a conifer old-growth obligate. Nests in a den in a tree, on the ground or underground.
Fringed myotis (<i>Myotis thysanodes</i>)	S	Found in a broad range of habitats, from grassland to coniferous forest, desert, riparian areas. Roosts in caves, mine tunnels, rock crevices, buildings. Hibernates in caves, mines, probably in Wyoming. Extremely susceptible to disturbance during hibernation.
Townsend's big-eared bat (<i>Plecotus townsendii</i>)	S	Deciduous forests, dry coniferous forests, mountain foothills scrublands, desert grasslands. Day roosts in caves, mines rock outcrops, night roosts in buildings. Hibernates in caves, probably in Wyoming. Extremely susceptible to disturbance during hibernation.
Pygmy shrew (<i>Sorex hoyi montanus</i>)	S	Coniferous forests, mountain-foothills grasslands, mixed grass/forb meadows, bogs, wet areas. Nests in old decaying logs and in the roots of tree stumps. Disjunct populations known from Medicine Bow Mountains south to central Colorado. Known in Wyoming only from eight specimens, seven of which were taken from Trails Divide Pond on the east side of the Medicine Bow Mountains.
Dwarf shrew (<i>Sorex nanus</i>)	S	Coniferous forests, aspen, mountain foothills shrublands, alpine grasslands, mixed alpine meadows, rock outcrops, and talus fields. Nests in a burrow. Isolated relict populations in alpine and subalpine zones in association with rockslides and talus slopes in mountainous habitats.
Northern goshawk (<i>Accipiter gentiles</i>)	S	Forested habitat resident. Forages in a variety of habitats. Nests in a tree.
Boreal owl (<i>Aegolius funereus</i>)	S	Boreal mixed coniferous forests, primarily old growth spruce-fir forest. Nests in tree cavity.
Ferruginous hawk (<i>Buteo regalis</i>)	S	Basin prairie shrublands; eastern great plains, great basin-foothills, and mountain-foothills grasslands; rock outcrops, cottonwood-riparian. Nests on a rock outcrop, the ground, a bank, or in a coniferous tree.
Western snowy plover (<i>Charadrius alexandrinus</i>)	S	Shorelines, aquatic areas. Prefers open habitats of alkali flats and dry lakebeds. Nests on ground among tufts of grass.
Black tern (<i>Chlidonias niger</i>)	S	Associated with large marshes and aquatic areas of the plains. Nests on a floating matt of dead vegetation.

Species	Status	Expected Occurrence Relative to Medicine Bow-Routt National Forest
Olive-sided flycatcher (<i>Contopus borealis</i>)	S	Old growth coniferous forests, preferably spruce-fir, also aspen riparian, with adequate snags or dead-topped trees. From 8,000 ft. to timberline. Often nests high in a conifer on a horizontal branch.
Black swift (<i>Cypseloides niger</i>)	S	Found in areas with rocky cliffs available for nesting. Nests are in crevices, caves, or on ledges in moister places or usually near waterfalls. Colonial nester.
Merlin (<i>Falco columbarius</i>)	S	Forest and woodland edges below 8,500 feet. Nests in old nest, usually magpie.
Peregrine falcon (<i>Falco peregrinus</i>)	S	A variety of habitats are used which contain cliffs for nesting sites and open areas for foraging. Nests on a ledge or in a hole on a tall cliff.
Greater sandhill crane (<i>Grus canadensis</i>)	S	Marshes, moist-wet mountain meadows, and riparian habitats in western Wyoming. Nests on the ground.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	S	Nests in sagebrush areas, desert scrub, pinyon-juniper woodlands, and woodland edges. Most likely found at lower elevations on NFS lands in Wyoming. Nest usually hidden below the crown in the crotch or low branch of a deciduous tree or shrub.
Long-billed curlew (<i>Numenius americanus</i>)	S	Inhabits sagebrush grasslands, moist-wet meadowlands, and mountain foothills. Nests on the ground near water, sometimes in a moist hollow.
Osprey (<i>Pandion haliaetus</i>)	S	Breeds along larger lakes and streams containing adequate supplies of fish throughout North American forests and woodlands. Nests on a tree, pole, or cliff near water.
Fox sparrow (<i>Passerella iliaca</i>)	S	Needs riparian shrub of dense, shrubby undergrowth of deciduous or coniferous forests, brushy woodland edges, woodland thickets, burned coniferous and logged/thinned forests, and willow thickets. Nests usually on the ground or in a shrub.
Three-toed woodpecker (<i>Picoides tridactylus</i>)	S	Open or dense stands of pine, spruce, and fir, especially where fires have left large stands of dead trees. Rely primarily on snags in Snowy Range. Nests in a snag cavity.
Black-backed woodpecker (<i>Picoides arcticus</i>)	S	Inhabits high-elevation coniferous forests in the Rocky Mountains, and appears to be a fire-adapted species. Has not been known to breed in southeastern Wyoming, however, potential habitat exists. Nests in tree cavity.
White-faced ibis (<i>Plegadis chihi</i>)	S	Inhabits wetland habitats, preferably marshes and sloughs or ponds surrounded by low bushes or willows, and emergent vegetation such as bulrushes. Nests in bulrushes or cattails, occasionally on the ground on an island.

Species	Status	Expected Occurrence Relative to Medicine Bow-Routt National Forest
Golden-crowned kinglet (<i>Regulus satrapa</i>)	S	Dense coniferous forests, especially old spruce-fir and lodgepole. Nest hung from branches near the trunk of a conifer.
Columbian sharp-tailed grouse (<i>Tympanuchus phasianellus columbianus</i>)	S	Midgrass prairie grasslands, mountain foothills shrublands, willow, irrigated native meadows. Nests on the ground in grass or under a shrub.

Appendix 3 – Lost Cabin Mine Draft EIS Comments and Responses

On October 16, 2003, a letter notifying the public that the Lost Cabin Mine Draft EIS was available for public comment was mailed to all individuals who had commented during the scoping efforts for this project. On October 24, 2003, a press release notifying the general public of the availability of the Draft EIS was mailed to local media contacts. On October 26, 2003, a legal notice announcing the availability of the Draft EIS was published in the *Laramie Daily Boomerang*. The *Laramie Daily Boomerang* is the paper of record for this project. Finally, on October 31, 2003, a Notice of Availability of the Draft EIS was published in the *Federal Register*. The 45-day public comment period for the Draft EIS began November 1, 2003 and expired December 15, 2003.

The following section responds to ***substantive** comments received during the 45-day Draft EIS review period. A total of 22 letters and e-mails were received during the comment period for the Draft EIS. ***Definition of substantive comments – Comments that are within the scope of the proposed action, are specific to the proposed action, have a direct relationship to the proposed action and include supporting reasons for the Responsible Official to consider. Comments not meeting this definition were not addressed in this section.**

Comments pertinent to the same subject have been grouped into categories. Many of the comments received were previously identified during the scoping period and addressed in the Draft EIS; therefore, the response to these comments will be brief and will reference the chapter or section of the Draft EIS that supports the agency's position. Pertinent excerpts of specialist reports were used to compile the Draft EIS. Specialist reports in their entirety are part of the official Project Record. Where noted, the response to comments refers to the full, unabbreviated specialist reports on file at the District office. Comments received from Federal, State, and local agencies are included in their entirety in this appendix.

The discussion, new information, and additional analysis included under the response to comments in this section are considered part of the Lost Cabin FEIS. This information is to be used as supporting documentation for the analysis, findings, and resulting Record of Decision (ROD).

Letter #	Commenter	Letter #	Commenter
1	Wyoming Department of State Parks and Cultural Resources	20	Mark Squillace
2	Roderick D. Laird	21	Stan Brooks
3	Joyce Evans	22	David Willms
4	Wendell Funk		
5	Michael A. Evans		
6	US Department of Interior		
7	Sierra Club, Laramie Chapter		
8	WY Game & Fish Department		
9	Biodiversity Conservation Alliance		
10	Patrick Huber		
11	Jody Spivey		
12	Todd D. Spivey		
13	Sierra Club, Wyoming Chapter		
14	Sam & Marilyn Verplancke		
15	Louis Braun		
16	US Environmental Protection Agency		
17	US Environmental Protection Agency		(duplicate of letter #16)
18	Dan & Janet Blair		
19	Bart Geerts		

Alternatives

Comment #1	Alternative 2 We wish to express that Alternative 2 (USFS Preferred Alternative) appears to be most in accord with National Historic Preservation Act objectives; given that alternative 3 (No Action) is not viable given the special limitations imposed on the NEPA and NHPA analysis processes by this undertaking. (Letter #1)
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Response: Thank you for your comment. The Lost Cabin Mine proposal is for prospecting and exploration, not for a full-fledged mining operation. As shown by Chapter 3 and the Appendices of the DEIS pp.20-89, the analysis found that the current proposal would have very little impact to area resources. As stated in the DEIS *Abstract* p.vii, since it best meets the purpose and need for action in the vicinity, the Forest Service has chosen Alternative 2 as the preferred alternative to be implemented for the Lost Cabin Mine proposal.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record** *All Resource Specialist Reports*.

Changes to FEIS/Project Record: No changes were made to the Final Environmental Impact Statement (FEIS) based on these comments.

Comment #2	<p>Alternative 3 – No Action I respectfully offer my support for what I believe to be your best option – Alternative #3 – No Action.</p> <p>Please select the No Action Alternative.</p> <p>Broken Arrow Mining, LLC has already enjoyed unauthorized motorized access to the Lost Cabin mine, making it difficult to believe that access is currently limited, unfeasible, or presents a hindrance to Broken Arrow Mining’s ability to reasonably use their claim. Although the No Action Alternative would prevent motorized access, there is no indication that a lack of motorized access would prevent reasonable use of claims. Compounding this is the fact that the DEIS simply asserts, with no supporting information or analysis, that the No Action Alternative would prevent reasonable use of claims. Since the Council on Environmental Quality (“CEQ”) NEPA regulations require decisions to be based on high quality information and accurate scientific analysis, this strongly indicates the MBNF has failed to take a hard look at the impacts of the Lost Cabin mining proposal. (Letters #2, #7, & #9)</p>
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Response: See response to **Alternatives Comment #1**. Discussed on p.viii of the DEIS, National Environmental Policy Act (NEPA) regulations require the Forest Service to analyze a No Action alternative and to use it as a baseline for comparing the effects of the other action alternatives. As pointed out in this section, the No Action alternative would not provide the claimants with “reasonable access” and/or the ability to conduct exploration activities using mechanized equipment. Alternative 3 would not be consistent with current U.S. Mining Laws (30 U.S.C. 21-54). As pointed out beginning on p.v of the DEIS, an existing road (Way 4170H) has accessed the mine site for over one hundred years. Motorized equipment is needed for the removal of prospecting samples from the mine site to the crusher site. Without motorized equipment this would not be feasible.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record** *All Resource Specialist Reports*.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #3	<p>Inadequate Range of Alternatives In the case of the Lost Cabin mining DEIS however, we are very hard pressed to find a reasonable range of alternatives presented before us. Not only have very few alternatives been considered, but ultimately both action alternatives pose virtually the same impacts, while the No Action alternative is summarily rejected. In terms of the significant impacts this mining proposal poses to important resources, such as wilderness, water quality, soils, and native species of wildlife, it is difficult to see how the MBNF addressed significant issues and unresolved conflicts, and seriously considered implementing alternative means to accomplishing the proposed Plan of Operations.</p> <p>Alternatives 5 and 6, which are somewhat similar to the No Action Alternative, were also inappropriately rejected for supposed inconsistencies with the Mining Law of 1872. There is no indication that these alternatives prevent reasonable use of the Lost Cabin mine, as the MBNF claims. For instance, Alternative 5 was rejected because “it would unreasonably restrict mining operations and would not allow the operators to exercise their rights under the U.S. Mining Laws, as amended.” DEIS, p. 17. Yet there is no information or analysis presented that shows this alternative is “unreasonably” restrictive or prevents reasonable use and nowhere does the DEIS...explain what is “reasonable” and what is “unreasonable.” However, even with the lack of information, it is difficult to see how Alternatives 5 or 6 prevent reasonable use of Broken Arrow’s claims, especially given that the company is already accessing working their claims on top of Vulcan Mountain.</p>
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Most disconcerting is that the No Action Alternative and Alternatives 5, 6, and 7 were rejected, despite the fact that they address the MBNF's obligation to protect the environment. Indeed, these alternatives pose considerably less severe environment impact than the action alternatives. Most notably, is that the No Action Alternatives and Alternatives 5, 6, and 7 do not irreparably degrade wilderness qualities in the Mowry Peak Roadless Area. These environmental benefits seem to have been overlooked by the MBNF in the DEIS, clearly demonstrating that the DEIS fails to "rigorously explore and objectively evaluate" reasonable alternatives (40 CFR 1502.14(a), emphasis added). Although 36 CFR 228 requires the MBNF to balance the need to protect forest resources with the need to allow "reasonable use" of mining claims, "minimize," all the DEIS seems to consider is the "reasonable use" aspect of this two pronged responsibility.

Given that both Action Alternatives essentially impact the Mowry Peak Roadless Area in the same way, it is difficult to see how the MBNF is fulfilling its nondiscretionary duty to minimize adverse environmental impacts to National Forest surface resources. Furthermore, given that the No Action Alternative, as well as Alternatives 5, 6, and 7 all effectively address the loss of potential wilderness and effectively "minimize" adverse impacts to the wilderness values of Mowry Peak, yet were all illegitimately rejected from detailed consideration, it is further difficult to see how the MBNF has fulfilled its nondiscretionary duty to minimize adverse environmental impacts.

All the action alternatives essentially lead to the same end result – reconstruction of 1.6 miles of road, the use of heavy machinery in the Mowry Peak Roadless Area, and a host of adverse impacts to water quality, fish and wildlife and their habitats, and to the recreational and wilderness values that make the Mowry Peak Roadless Area so special. While the no Action Alternative is addressed, the MBNF also indicate this alternative is doomed to fail because of supposed conflicts with the Mining Law of 1872. Analysis of two, essentially similar action alternatives can hardly be considered a "range" under NEPA and the CEQ NEPA regulations. (Letter #9)

Response: See responses to Comments #1 & #2. A discussion on how the alternatives were developed for the proposal can be found on pp.6-16 of the DEIS. The reasons for dismissing Alternatives 4-7 from detailed analysis can be found in the DEIS on pp.16-17. A comparison of the alternatives that were analyzed in detail can be found displayed on Table 1 on pp.17-19 of the DEIS. The specific significant differences between Alternative 1-3 can be readily seen on this table. Major differences between Alternatives 1 and 2 include less road clearing, location of crusher and camp site outside of the Mowry Peak Inventoried Roadless Area (IRA) within an existing disturbed site, shortened operating season, and limits use to just a bobcat (small dozer) and all terrain vehicles (ATVs) within the IRA. As stated in the DEIS *Abstract* p.i, since it best meets the purpose and need for action, along with protecting area resources in the vicinity, the Forest Service has chosen Alternative 2 as the preferred alternative to be implemented for the Lost Cabin Mine proposal.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record *All Resource Specialist Reports*.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Economics

Comment #4	<p>Economic Viability of Proposal None of the low-grade ores in the area are economically viable, so there is very little chance for extraction to be a paying proposition.</p> <p>The Interior Board of Land Appeals has made clear that when you look to see whether a claimant has made a discovery, you have to look at a host of factors including the availability of land, water, and financing, as well as the cost of reasonable environmental controls.</p> <p>Has the land been accurately appraised for multiple uses? Like many other mining claims, there are only so many years of productivity. I would ask that the USFS please document the property value as a residence, commercial, recreational use, and property that may be exchanged for profit.</p> <p>What is being prospected for that it is of greater value than the undisturbed natural landscape? (Letters #2, #4, #12, & #20)</p>
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Response: The economics of the proposal are discussed beginning on p.10 of the DEIS. The purpose of this small exploration process is to gather materials for assay, which will show both the mineral content of the samples and the potential values associated with them. Value determination of the prospected material is proprietary information.

The Forest Service is not required to determine whether a “discovery” has been made at this time. The subject lands are open to exploration, and the purpose of exploration is to make a discovery of a valuable mineral deposit. An Informational Memorandum to Dale Bosworth, Chief of the Forest Service, from Mark Rey, Undersecretary, Natural Resources and Environments, stated in summary: “On National Forest System lands reserved from public domain and open to entry under the mining law, the Forest Service is not required to inquire into claim validity before processing and approving proposed plans of operations. Consistent with its regulations and the Surface Resources Act (30 U.S.C. 612), the Forest Service will continue to ensure proposed activities are required for and reasonably incidental to prospecting, mining, or processing operations, and ensure operations minimize adverse environmental effects to the extent feasible. Such activities will be authorized through an approved plan of operations.” Any future proposed operations in addition to the present exploration covered by this document will require additional NEPA and approval.

The lands will not “fall into private hands.” This is a small short-term request for exploration, not a mineral extraction or processing operation. The Department of Interior currently has a moratorium on issuing patents for mineral claims, and that process is lengthy and expensive at best. The Forest Service has not identified any lands in this area in the Landownership Adjustment Plan as candidates for disposal through exchange. Any exchange of property undertaken by the Forest Service must be of equal value and determined to be in the public interest.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Lands, Minerals & Non-recreation Special Uses Specialist Report.*

Changes to FEIS/Project Record: Based on these comments two memos concerning current USDA Policy on Mining of Public Domain Mineral Estate have been added to the project record.

Travel Management

Comment #5	<p>Illegal ATV Use Individuals, I strongly suspect those who are attempting to “prove up” on the Lost Cabin claims, have already violated the non-motorized vehicle rules by driving ATVs to the mine sites. I saw evidence of this in July of 2001, when I hiked to the top of Vulcan. They also have illegally altered an historic cabin on the site. I have photographs to prove this. Why does the Forest Service believe that these individuals would follow new, less strict rules in their conduct on the site now?</p> <p>We believe illegal ATV use will increase with the proposed action since there will be higher traffic to the area, a greater awareness of activities behind the gates, and difficulty in keeping ATVs from bypassing barriers to reach improved roads and trails.</p> <p>How does the USFS plan on implementing all of the restrictions it will endure while this mine is active and inactive? Would the USFS monitor off-road and ATV use in proximity to areas that do not allow such activities, for example, undesignated trails, wetlands, and habitat for sensitive species. Although the USFS does a respectable job monitoring illegal off-road and ATV use – I feel this area has a very high potential for violations. Will the Brush Creek – Hayden district office have the resources needed to monitor this location? (Letters #3, #12, & #8)</p>
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Response: The DEIS discusses the travel management found in the analysis area; found on p.23; the text explains that this area was closed to off route travel by a decision issued October 2000. This decision was implemented upon the signing of a Travel Management Special Order No. 2001-03, executed August 1st, 2001. Prior to July of 2001 it would be conceivable to find ATV tracks in the vicinity of the project area made by the claimants or the public. The comment is speculative in saying that the claimants caused the use observed in July of 2001.

Prior to any proposed plan of operations, the historic cabin had been identified as having received some alterations as early as 1998 and 1999. It is speculative as to say who and when the structure was modified. District Law Enforcement and Archeological staff visited this site prior to any application, observing increased ATV use and that the cabin had been modified. At that time it was hard to determine if the cabin was being used as a warming hut for individuals who were snowmobiling during the winter, a base for fall hunting, or some mining purposes.

The Existing Condition for Recreation, DEIS, p.35, discloses that there are no designated motorized trails in the Mowry Peak IRA. Since there are no designated summer motorized trails, only authorized individual or groups would be allowed in the area; all others would be violators of travel restrictions. The Medicine Bow National Forest no longer allows summer off road use; travel is limited to route only travel. The Forest has an extensive travel management program including, education, signing, and enforcement. The Forest uses signs to inform, educate, and provide control of motorized vehicles. These signs include portal regulation, individual road closure, and area closures.

The Brush Creek/Hayden Ranger District does monitor off-road use in several ways, including but not limited to the following--responding to public reports, reports from Wyoming Game and Fish personnel, Carbon County Sheriff personnel, Forest Service employee field presence. The field presence would include personnel involved in ongoing forest management, but also additional enforcement during holiday, weekends, and hunting season. As emphasized under Recreation Use in the DEIS, p.37, hunting is the most popular activity and this area would receive additional patrol and enforcement activities at that time.

An additional education opportunity that the District has capitalized on is through the Wyoming Off Road Vehicle (ORV) sticker program. Basically, to operate an ATV on a State enrolled trail, the machine must have a sticker from the state. This program also enrolls both open forest roads and motorized trails as part of the ORV trail system. When an individual purchases an ORV sticker they are given a map of the local area that shows the enrolled roads and trails. This map also includes rule information on the ORV sticker program, Game and Fish regulations, and Medicine Bow National Forest travel management regulations.

The Brush Creek/Hayden Ranger District does have the resources to monitor this location, especially for the compliance of the plan of operation. Monitoring of illegal ATV use, which would include enforcement of regulations and prevention of illegal activities, is ongoing year round throughout the District. The District has been working hard to plan, schedule, and implement as many law enforcement trips as possible, especially enforcing travel management. In the summer of 2003 the District had extra staff work during Holiday weekends, and opening day and weekends during hunting season.

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record** *Recreation and Infrastructure Specialist Reports and Roads Analysis*.

Changes to FEIS/Project Record: Based on these and other comments an additional mitigation measure will be included to require All ATV/bobcat routes be staked or flagged and they will be the only authorized travel routes at the claim location. Trails with steeper slopes will have dips installed as specified by the Authorized Officer. At the end of this project, the trails will be reclaimed as specified by the Authorized Officer.

Comment #6	<p>Require the Use of Helicopters Use of helicopters for experimental testing, if proving negative, will save the environmental destruction of land-based entry.</p> <p>Recently, in order to protect roadless values and water quality, the Forest Service has required helicopter access mining claims for exploration-related work. See Record of Decision for the NICORE Mine, Siskiyou National Forest of August 4, 1999 (attached). The Regional Forester denied the appeal of the mining claimant. Thus, for the Lost Cabin Mining, the Forest Service incorrectly applied its authority over the proposal. As such, the agency should have, at a minimum, fully reviewed the non-motorized and non-roaded access alternatives. (Letters #4 & #9)</p>
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Response: See responses to **Comments #1, #2, #3, #4, #23 and #24.** As shown by discussions on p.17 under *Alternatives Considered but Eliminated from Detail Study* section of the DEIS, alternatives that included non-motorized access (Alt. 6) and required use of helicopters (Alt. 7) were eliminated from consideration due to economic and reasonable access concerns. The land-based entry along historical road number 4170H currently exists and has existed for over 100 years. The water & soil resource and the environment can be improved by installing the recommended drainage structures described in the preferred alternative.

The Lost Cabin Mine preferred alternative includes utilizing existing roads with only downfall clearing and drainage structure construction/maintenance. The (cited) Nicore Mine proposed operation included extensive road construction/reconstruction, with many live stream crossings. The 1999 Nicore Mine Record of Decision occurred prior to the 2001 Roadless Area Conservation Rule and direction. Requiring the use of helicopters would be a hardship, considering that a historical mining access currently exists that is in acceptable resource condition (with minor improvements).

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record *Heritage, Lands, Minerals & Non-recreation Special Uses, and Infrastructure Specialist Reports and Roads Analysis.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

<p>Comment #7</p>	<p>Reasonable Access No where in the Mining Law of 1872 is “reasonable access” defined and regulations at 36 CFR 228 simply demand that the MBNF allow access, with terms and conditions reasonably necessary to protect the environment and forest surface resources. There does not seem to be any legal requirement, statutory or otherwise, that strips the MBNF of its discretion to reject or significantly modify Broken Arrow Mining, LLC’s Plan of Operations in order to protect forest resources.</p> <p>In <i>Clouser v. Espy</i>, the Ninth Circuit also affirmed the Forest Service’s restrictions on a mining operation, limiting the claimant to access via pack-mule only. <i>Clouser v. Espy</i>, 42 F.3d1522 (9th Cir. 1994). The court rejected the claimant’s argument that such a restriction violated federal mining laws: In light of the broad language of [Organic Administration Act] 551’s grant of authority, [Organic Administration Act] 478’s clarification that activities of miners on national forest lands are subject to regulation under the statute, and this substantial body of case law, there can be no doubt that the Department of Agriculture possesses statutory authority to regulate activities related to mining – even in non-wilderness areas – in order to preserve the national forests.</p> <p>Since mining has already been going on at Lost Cabin, it is clear that Broken Arrow does have reasonable access. Building another road will only make access cheaper and easier for the company and enable it to extract whatever minerals are there more quickly. (Letter #7 & 9)</p>
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Response: See responses to **Comments #1, #2, #3, #4, & #6**. The commenter is correct in stating that the 1872 Mining Law does not specifically define “reasonable access.” Reasonable access is determined on a case-by-case basis, depending on the proposed plan of operations, Forest Plan direction, and the existing transportation system. The Modified Plan of Operations (Forest Service Preferred Alternative 2) does not allow any new road construction/reconstruction to the mining claim. As previously discussed access would be allowed on an overgrown road that has existed on the ground and on maps of the area for over one hundred years. This current access will be utilized, and only improved to preserve the historic road, water and soil resources. Alternative 2 design, mitigation measures, and monitoring will lessen the impacts of the proposal to area resources. Motorized equipment is needed for the removal of prospecting samples from the mine site to the crusher site. Without motorized equipment this would not be feasible.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Lands, Minerals & Non-recreation Special Uses, and Infrastructure Specialist Reports and Roads Analysis.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #8	Effective Road Closures The Draft EIS does not indicate how motorized public use of newly opened and reconstructed roads would be effectively limited, if there will be effective closures during non-mining periods, and how the roads will be effectively obliterated at the end of the project. (Letter #8)
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Response: All roads in this area are currently closed to motorized use by the steel gate at the beginning of NFSR 439. This same closure will be in effect during and after the mining operation. This closure decision was implemented upon the signing of a Travel Management Special Order No. 2001-03, executed August 1st, 2001.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Infrastructure and Recreation Specialist Reports, and Roads Analysis.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #9	Use of Motorized Equipment The Draft EIS should validate that the desired exploration cannot be achieved without the use of motorized equipment or with smaller motorized equipment. (Letter #8)
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Response: See response to Comments #1, #2, #6, and #7. There is a statutory right for persons to prospect and mine on National Forest System land open to mineral exploration (Forest Service Manual 2817.01). The Forest Service is analyzing the plan of operation that includes the use of motorized equipment submitted by Broken Arrow Mining. An analysis of the action alternatives found that there would be no significant effects to area resources. Alternative 2 (preferred alternative) is designed to minimize the impacts of motorized equipment on the area during project implementation.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Lands, Minerals & Non-recreation Special Uses and Infrastructure Specialist Reports, and Roads Analysis.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #10	Road #'s on Maps Roads 440, 443, 447 and 447.1A are not identified on the maps. (Letter #8)
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Response: The scale used for Maps 3 and 4 on pp.13-14 of the DEIS prevents displaying NFSR's 447 and 447.1A which are off the map to the east and southeast. There are unlabeled segments of NFSR's 440 and 443 on these maps

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Infrastructure Specialist Report and Roads Analysis.

Changes to FEIS/Project Record: Based on this comment, NFSR’s 440 and 443 will be labeled on the Alternative maps included in the FEIS.

Mining Operations

Comment #11	Drilling Vs. Digging Drill rather than dig for samples (less damage & easily transported). (Letter #9)
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Response: The Lost Cabin Mine Analysis is based upon the Plan of Operation submitted by Broken Arrow Mining. Drilling is typically used to obtain deep target samples. As discussed on pp.11-12 of the DEIS under *Alternative 1 – Proposed Action*, under this proposal the proponents intentions are to prospect for and collect samples relatively near the surface from existing mine shafts, prospect holes, tailing piles, and selected outcrops. All disturbed areas will be reclaimed after each operating season.

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Lands, Minerals & Non-Recreation Special Uses Specialist Report.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #12	<p>Impacts of Future Mining Development Let us also suppose that enough minerals are present to allow development of the claim. What action will the owners take? Will they decide to mine there? That means another request for road improvement and waste disposal, resulting in another EIS or at least an EA. That is a lot of administrative time and work for our federal employees in addition to taxpayer cost.</p> <p>The DEIS fails to address the cumulative impacts of potential future mine development. While the MBNF discloses that, if a discovery is made, more extensive development and environmental impacts may occur, the DEIS entirely fails to address this potentially significant cumulative impact.</p> <p>A section should be added to the FEIS explaining the NEPA and regulatory process that will occur if Broken Arrow Mining (or successor) wants to expand exploration beyond the eight test pits or once to develop a mine. (Letters #3, #9 #16, & #17)</p>
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Response: These comments are beyond the scope of this analysis. As stated in the Lost Cabin Mine DEIS, p. ix, *Decision Framework*, the decision will include a determination as to where and under what terms and conditions the proponent may access the Lost Cabin Mine to gather materials for assay. The Forest Service does not analyze potential future mine development. Analysis is based upon the plan of operation submitted by Broken Arrow Mining.

Though it could occur, at this time the agency does not know of any future extensive mine development. Future extensive mine development could occur but it would be speculation to say when it might occur. This analysis is for access and prospecting, extensive mine development will require future additional environmental analysis, further public input, and another project decision.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record All Resource Specialist Reports.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #13	Firearms Will mine personnel be prohibited from carrying firearms while on permitted sites and while conducting exploration activities? (Letter #8)
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Response: See response to Comment #31. The same rules and regulations concerning the use and carrying of firearms that apply to the general public will apply to mine personnel. Mitigation has been included that prohibits the claimant/operator’s use of the mine site and gated motorized access for the purposes of hunting.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Recreation Specialist Report and Wildlife BA/BE.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #14	Duration of Operation If personnel will only be working the site for 8 to 10 days/month, is it possible to consolidate work periods to narrow the time window of activity and disturbance (e.g., starting (> July 1), work more days at a time (say, 25), and be done earlier (< Sept. 15) to allow wildlife more time to settle before the main hunting seasons? Conversely, would a more intensive field season allow the project to be completed in less than 5 years? (Letter #8)
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Response: See response to Comment #13. The plan of operations submitted by Broken Arrow Mining, *Alternative 1: Proposed Action*, identified exploration work at the Lost Cabin Mine between June and the end of October for the next five years (DEIS, p.v). The five-year period allows for weather and snow delays to the prospecting activities. Situated at over 10,700’ in elevation, during average snow years motorized access to the top of Vulcan Mountain could be limited at the beginning and end of the July-October operating season further shortening what is already a fairly short operating season (3 1/2 months). *Alternative 2: Modified Plan of Operations (Forest Service Preferred Alternative)* would limit exploration activities to July 1 through October 15 (DEIS, p.vii). The July 1 start up date addresses concerns from disturbance from the operation to elk calving in the vicinity.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE..

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Watershed and Aquatics

Comment #15	<p>Effects to Surface and Subsurface Water Isn’t it irresponsible to contend that digging, crusher waste piles, sites and roading will not affect surface and subsurface water? (Letter #4)</p> <p>Page 28, Chapter 3. The second sentence in the paragraph states that because the existing mine shafts are constructed vertically, ground water, if present, is prevented from leaving the shaft. It is not clear how the vertical construction could prevent ground water at depth from leaving, unless the sides and bottom of the shaft are sealed (made impermeable). Furthermore, no information is provided on the depth to ground water or how deep the mine shafts are. We recommend that the section be expanded further to discuss the occurrence of ground water (quantity and quality, and depth to ground water) in the project area, especially the area containing the mine shafts and prospecting pits and to explain if the shafts intersect the water table and how water is prevented from migrating through the mine shafts. (Letter #6)</p>
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Response: See response to Comment #11. As discussed on pp.11-12 of the DEIS under *Alternative 1 – Proposed Action*, under this low impact proposal the proponents intentions are to prospect for and collect samples relatively near the surface from existing mine shafts, prospect holes, tailing piles, and selected outcrops along the rocky ridge at the very top of the 10, 784’ Vulcan Mountain. No settling ponds or new tailing piles will be created by this exploratory proposal. On-site inspections of the existing (collapsed) mine shaft and prospect holes during the 2002-03 field seasons found no evidence of water being present.

The DEIS (p.15) lists specific mitigation measures to minimize effects of the proposed activities and to ensure this project meets the Clean Water Act. The mitigation measures will be monitored (DEIS p.15-16) for implementation and effectiveness in reducing impacts to streams. If monitoring reveals unexpected effects, additional monitoring for potential stream impacts to stream water quality and amphibian habitat may be initiated, actions may be required to reduce detrimental effects.

There is no available data concerning depth to water table, groundwater flow patterns or groundwater quality. The operating plan specifies that all excavations (pits) will be reclaimed by the end of the operating season. It is unknown if groundwater is currently exposed to air in existing shafts; however new groundwater exposure to air would be minimal. Groundwater exposure would only occur during the operating season, as all pits and shafts would be filled at the end of the operating season. If pumping of groundwater encountered during excavation is required, a discharge permit from the State of Wyoming would be necessary. The discharge permits normally require mitigation and monitoring to prevent adverse water quality effects. With these mitigation measures, the effect on groundwater should be minimal and short in duration, and so is not expected to affect groundwater or surface water quality.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.*

Changes to FEIS/Project Record: Based on these and other comments it is recommended that the following additional Mitigation and Monitoring Measures be added to FEIS:

- Pumping of groundwater out of excavations, pits, or shafts will be allowed under this project only if a discharge permit from the State is obtained by the proponent and a copy is furnished to the Forest Service prior to pumping.
- Sample rock and crusher will be located on a non-porous, durable liner.
- The crusher site will be located more than 300 feet from any swale, drainage, stream channel, wetland, or riparian area.
- The project proponent will comply with the State of Wyoming storm water discharge permit requirements for construction activities (NPDES permit WYR10-0000) prior to starting work. If the proposed action exceeds amount of ground disturbance specified in the permit, then an “authorization to discharge storm water associated with large construction activity under the National Pollutant Discharge Elimination System (NPDES)” must be obtained. The Authorized Officer shall be provided a copy of the permit upon request. Failure to comply with this requirement will be cause for a notice of non-compliance to be issued.
- All disturbed sites will be reshaped and revegetated following the authorized officers specifications.

- The mitigation measures will be monitored for implementation and effectiveness by the Forest Service. If monitoring reveals unexpected effects, additional monitoring for potential impacts to stream water quality and amphibian habitat may be initiated, and actions may be required to reduce detrimental effects.

<p>Comment #16</p>	<p>Effects to Water Quality Additionally, the DEIS's assessment of impacts to water quality is also lacking. Although the Lost Cabin Mining proposal will lead to an "increase in sediment for the first year," the DEIS fails to provide any assessment of this impact or disclose the methodologies used to assess this impact. While the MBNF claims that sediment erosion would decrease after the first year, we cannot find any information or analysis to support this claim. Furthermore, while the MBNF claims that sediment erosion will decrease, there is no indication that it will decrease to insignificant levels or to levels that effectively protect the long-term health of aquatic ecosystems. There is also no temporal context provided supposed sediment erosion decreases. In other words, while sediment erosion will apparently decrease, there is no information or analysis presented that shows the rate at which sediment erosion will decrease or how long it will take to decrease to levels that currently exist. The failure to adequately analyze and assess the impacts of sediment erosion raises serious questions over whether the MBNF has taken a hard look at impacts to water quality.</p> <p>Finally, there seems to be a serious lack of any baseline data for which to analyze and assess impacts to water quality. We can find no reference to or presentation of stream monitoring data or other data that would provide any insight into the existing conditions of streams, wetlands, and riparian areas within the project area. While the general existence of these watershed features is disclosed, their conditions are not. This is a serious flaw and it is difficult to see how the MBNF could possibly adequately analyze and assess impacts without such information.</p> <p>How does the USFS plan on monitoring water quality? Is there any documentation to acknowledge the present water quality and current condition of adjacent wetlands? What criteria were established in order to maintain and preserve the present water quality condition?</p> <p>EPA's main concern with this project is water quality, specifically the potential of the test pits, waste rock and shaft reopenings to generate acid mine drainage. As we mentioned in our scoping letter of May 2002, this area already has one mine with serious acid mine/rock drainage problems, the Ferris Haggerty Mine. Discharges from Ferris Haggerty mine, polluted with copper have eliminated aquatic life downstream of the mine for several miles. (Letters #9, #12, #16, & #17)</p>
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Response: See response to Comment #15. No baseline water quality data for this area has been found. Field surveys observed sediment delivery to tributaries of South Heather Creek from erosion on the historic road. The proposed action would install drain dips to reduce erosion on this road. Sediment delivery may increase while the drainage features are being installed due to soil disturbance. Sediment would decrease the following year as the water would no longer flow down a long portion of this road as it currently does, but would be diverted off the road frequently by drain dips, where the water would then soak into the forest floor rather than being routed directly into a stream channel.

Sediment production from road construction and reconstruction is highest during the first several rainfall events, and then decreases as newly disturbed surfaces become armored. A study in Idaho found that the majority of sediment production occurred in the first two years after road construction (Burroughs, 1990).

The mineralogy of the area is predominantly quartzites and shale with small occurrence of gabbro. These rock types typically don't contain large quantities of sulfide mineralization (USGS Professional Paper #25).

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.

Changes to FEIS/Project Record: See response to Comment #15, additional water quality monitoring has been incorporated into the FEIS to determine if water quality is affected by the mining activities.

Comment #17	<p>Effects to Wetlands Not only are high elevation wetlands at risk from the proposed mining, but streams face a potential for increased sediment and possibly heavy metal pollution and acid mine drainage. The Preferred Alternative therefore threatens water quality and wetlands. Any such projects need to comply with the Clean Water Act and existing regulations to protect wetlands and water quality. Nowhere does the DEIS seriously address the issue of such compliance. Has the Broken Arrow Mining Company received the appropriate Clean Water Act permits for its operations? Until it does, it can surely not be allowed to proceed with this potentially polluting project.</p> <p>This mining almost certainly threatens the water quality of the wetlands of this area, a potential habitat for the imperiled boreal toad. (Letters #7 & #10)</p>
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Response: See responses to Comments #15 & #16. As previously discussed the Lost Cabin Mine proposal is for prospecting and exploration, not for a full-fledged mining operation. As shown by Chapter 3 and the Appendices of the DEIS pp.20-89, the analysis found that the current proposal would have very little impact to area resources. Any such future mine proposal would need a much more comprehensive analysis.

The DEIS (p.15) lists specific mitigation measures to minimize effects of the proposed activities and to ensure this project meets the Clean Water Act. The mitigation measures will be monitored (DEIS p.15-16) for implementation and effectiveness in reducing impacts to streams. If monitoring reveals unexpected effects, additional monitoring for potential stream impacts to stream water quality and amphibian habitat may be initiated, actions may be required to reduce detrimental effects. The Broken Arrow Mining Company has obtained the appropriate DEQ permits, and is responsible for obtaining additional permits if necessary.

The potential for actual adverse impacts to boreal toad individuals, populations and potential habitat is unquantified, but likely to be very low. Wetland areas that provide potential toad habitat are located more than 0.5 miles from the mine site, and no boreal toads are known in this or adjacent areas. As indicated in the Biological Evaluation for this project, because boreal toads are not known to occur in the project area, potential impacts have been mitigated, and monitoring will occur to assure the level of actual impacts, the project was found to have **no impact** on boreal toads or their habitats.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.*

Changes to FEIS/Project Record: **See response to Comment #15**, additional water quality monitoring has been incorporated into the FEIS to determine if water quality is affected by the mining activities.

Comment #18	<p>Impacts to Soils The Draft EIS recognizes existing soil erosion from OHVs and sediment deposition from roads and trails into South Heather Creek. To what extent will the project affect these problems?</p> <p>The discussions of Erosion and Sedimentation (pages 28 & 30) for the proposed alternatives concentrate on erosion controls for roads and ATV/bobcat trails. Will any additional erosion control be necessary for some of the wider areas of disturbance such as the crusher site and the material removed from the test pits?</p> <p>The DEIS discloses that soil compaction, loss of productivity, and soil erosion will occur as a result of authorizing the Lost Cabin Mine Plan of Operations. Unfortunately, nowhere can we find an assessment of these impacts or any discussion of the methodologies used to assess these soil impacts. Furthermore, as in the DEIS’s discussion of water resources, we cannot find any discussion of the existing conditions of soils in the area. There is no baseline data for which to even analyze and assess the impacts of soil compaction, loss of productivity, and soil erosion. This is another serious flaw and it is difficult to see how the MBNF could possibly adequately analyze and assess impacts without such information.</p> <p>It does not appear that roads are factored into the estimated acreage to be disturbed. (Letters #8, #9, #16, & #17)</p>
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Response: Under Alternatives 1 and 2, the roads and trails used to access the mining claim would have drainage improved, which would reduce sediment delivery to South Heather Creek. Under Alternative 3, no change would be made to the existing trails, so sediment delivery would remain approximately the same as currently exists. On p.15 of the DEIS, the mitigation measures #2 and #6 apply to the crusher site, shafts, adits and discovery pits.

Existing watershed conditions and effects on soil productivity and soil compaction were analyzed in the Watershed, Soils, Aquatics and Fisheries Specialist Report. Existing watershed conditions were analyzed by considering the effects of past and current activities in the watershed such as roads, timber harvest, and cattle grazing. The area of potential soil compaction and loss of productivity was calculated through estimated area affected by the crusher site, ATV trails, road access, and stock and foot trails. The roads were the primary factor in the estimated acreage.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.*

Changes to FEIS/Project Record: See responses to Comments #5 and #15, additional mitigation for ATV use and water quality monitoring has been incorporated into the FEIS to reduce impacts and determine if water quality is affected by the mining activities.

Comment #19	<p>Storm Water Discharge Permit While the proposed Lost Cabin mining operation undoubtedly requires a Clean Water Act storm water discharge permit, as indicated by the MBNF on page 53 of the DEIS, there is no indication that such a permit has been issued or has even been applied for. This makes it difficult to believe that the Lost Cabin mining operation will be “consistent with the Clean Water Act” as the MBNF claims on page 53 of the DEIS. Without the proper permits, as well as the associated plans of mitigation, how can the MBNF be certain of compliance with the Clean Water Act permit and consequently the actual impacts to water quality, aquatic ecosystem health, and aquatic species?</p> <p>The MBNF seems to have a paltry amount of information regarding the impacts of the Lost Cabin mining proposal to water quality. Most notably is that there does not appear that Broken Arrow Mining, LLC has applied for and received the appropriate Clean Water Act permits and authorizations for its operations. In particular, the company has not yet obtained the appropriate Storm Water Discharge permit or the appropriate certification under Section 401 of the Clean Water Act.</p> <p>Likewise the Forest Service cannot approve any plan of operations without this certification. Given that these permits necessary to ensure compliance with the Clean Water Act, it seems impossible that the proposed Plan of Operations will be consistent with the Clean Water Act, as the DEIS states on page 53. Further, without these permits and information, how can the MBNF possibly assess impacts to water quality in terms of compliance with the Clean Water Act? Overall, the</p>
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	<p>MBNF cannot adequately analyze and assess impacts to water quality and ensure compliance with 36 CFR 228.8(b) until these permits have been issued.</p> <p>In addition to the Section 401 requirements, Section 313 of the CWA, as well as the agency’s Part 228 regulations, requires that operations cannot proceed until it is assured that all water quality requirements (e.g. standards) will be fully protected. A plan of operations cannot be approved without this assurance. Here, since the record does not contain evidence that this will be the case, the plan cannot be approved.</p> <p>The DEIS does not indicate that the proposed mining complies with the Clean Water Act and that regulations are in place to protect wetlands and water quality. (Letters #9 & #18)</p>
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Response: The DEIS lists the mitigation measures considered to be necessary for this project to comply with the Clean Water Act. The Broken Arrow Mining Company is responsible for obtaining an NPDES Stormwater Permit prior to clearing additional area, if a permit is deemed necessary. The Wyoming DEQ is responsible for reviewing the permit and determining compliance with the Clean Water Act. If the operator does not obtain the necessary permits prior to beginning their operation then they would be in non-compliance with Forest Service regulations and their approved Plan of Operations.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.*

Changes to FEIS/Project Record: See response to Comment #15, additional water quality monitoring has been incorporated into the FEIS to determine if water quality is affected by the mining activities.

<p>Comment #20</p>	<p>Impacts to Fisheries We would like to make a comment on the statement made on page 26 in Biotic Existing Conditions (Fisheries). The last sentence on that page reads “These trout are considered management indicators, but are not cause for viability concern given their widespread distribution across the Forest and Region.” While we recognize that native trout are not an issue in the North Platte River basin, non-native trout populations and their viability are extremely important since they have become self-sustaining. The North Platte River and associated tributary streams are primarily managed as a Wild Fishery and depend on conditions that support natural reproduction. The North Platte River is an extremely important fishery regardless of whether the trout are native or not. (Letter #8)</p>
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Response: Thank you for your comment. The importance of the non-native trout populations in the North Platte River and its tributaries is recognized at the Forest Plan level, and in designation of common trout species as Management Indicators in the Plan. However, trout-bearing waters are located more than 1 mile from the project area, and potential impacts to those habitats have been mitigated. Thus, while the North Platte fisheries are extremely valuable, they have little relevance to this analysis.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.*

Changes to FEIS/Project Record: See response to Comment #15, additional water quality monitoring has been incorporated into the FEIS to determine if water quality is affected by the mining activities.

Visual Impacts

Comment #21	<p>Effects to Visual Quality How can it be contended that the visual impact of this proposal is minor?</p> <p>The Lost Cabin Mine lies at the top of Vulcan Mountain. Under the Preferred Alternative, heavy machinery will be brought to the Lost Cabin Mine to develop old mine sites, dig up historic mine tailings, dig new prospect pits, and rebuild old, decommissioned roads. Because of its location, the Lost Cabin mining proposal would have a tremendously negative impact upon the visual quality of the Mowry Peak Roadless Area.</p> <p>It poses tremendous impacts to the visual quality of the Mowry Peak Roadless Area because of its location on top of Vulcan Mountain.</p> <p>The DEIS does not indicate that visual quality would not be degraded in any way. (Letters #4, #8, & #18)</p>
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Response: The DEIS, on p.38, discusses the effects to visual quality. The DEIS discusses that impacts to visual resources is subjective and based on individual values. The proposed camp and crusher location are located in an area that has received past timber harvest having a very modified landscape. The largest impact to the visual resource will be in the short term when equipment is on in the area. The proposed action calls for site rehabilitation prior to the end of each season. In the short term the visual impact is very great. Once the trail and prospect sites are reclaimed and the vegetation returns there should be no visual impacts. Much of the work proposed for 4170H is screened by large conifer timber. The DEIS discloses in the description of the Proposed Action that the entire area being sampled is 1/5th of an acre at 3-4 new spots and from 3-4 old prospects or workings. Initial prospects will be rehabilitated prior to beginning another. At the higher elevation of the project area only ATVs and bobcat vehicles will be observed and for short periods of time.

The DEIS, on p.35, discusses Roadless Area Characteristics 7. *Naturally appearing landscapes with high scenic quality*. Under this heading the DEIS discloses the occurrence of the historic mining activity, the human influenced landscape that the Mowry Peak IRA is already visually impacted. As stated above the short term will have visual effects but upon reclamation the effect is negligible. The historic mineral development and associated human created structures are not on top of Vulcan Mountain, but located in the saddle and well screened by space and vegetation.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Recreation Specialist Report.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Heritage Resources

Comment #22	<p>Effects to Heritage Sites The Forest Service has shown no resolve to enforce their regulations and the result is the degradation of some cultural heritage and most of all an exceptional alpine environment.</p> <p>A more detailed map showing the historical, existing and proposed mining-related activities would help with the interpretation of the Draft EIS. (Letters #5 & #8)</p>
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Response: See response to Comment #1. The existing condition and effects to Heritage resource is discussed on pp.50-52 of the DEIS. The National Historic Preservation Act of 1996 and its subsequent amendments direct federal agencies, including the Forest Service, to take into account the effect their land-managing decisions will have on cultural resources. Implementing regulations found at 36 CFR Part 800 state in part that, “An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of a property’s location, setting, or use may be relevant depending on the property’s significant characteristics and should be considered” [36 CFR Part 800.9(a)]. The quality of significance is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Lost Cabin Mine was surveyed and recorded by the District Archaeologist and crew during September, 2003. Cultural resources at the site were found to be significant. The Forest is currently consulting with the Wyoming State Historic Preservation Office (SHPO) regarding appropriate mitigation measures for any damages that may result to the cultural resource site as a result of the proposed action. A report documenting the findings of this survey is being finalized for submission to Wyoming SHPO for review and consultation. No implementation will take place on the project proposal until after the SHPO consultation process has been finalized. It is anticipated that this consultation will be completed during the spring of 2004 before field season begins.

The District has a number of historic mining maps available for public viewing at the office in Saratoga.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record Heritage and Recreation Specialist Reports.**

Changes to FEIS/Project Record: The following mitigation measures and monitoring will be added to the Plan of Operations:

- Prior to exploration activities, any logs around the main mine shaft that need to be moved to allow exploration will be mapped, photographed, removed for safekeeping, and stored on-site. Following exploration activities, the logs shall be replaced as close to their original position as is possible.
- If any exploration activities are conducted at the two secondary shafts which contain structural features, and any logs need to be moved to allow exploration, the logs will be mapped, photographed, removed for safekeeping, and stored on-site. Following exploration activities, the logs shall be replaced as close to their original position as is possible.
- It is the Authorizing Officer's decision that no use or alteration of the mine site cabin will be allowed.
- Existing cribbing in shafts will be left in place as much as is feasible and safe.
- The cart rails on top of the main dump pile will not be disturbed during the project.
- Access to the main shaft must be from the north, so that no heavy equipment passes between the main shaft and the cabin.
- No new large dump rock piles may be established at the site. Rocks must be removed to the crusher site for additional testing.
- Reclamation activities will be planned such that no additional disturbance or impacts will occur to the historic site features.
- A qualified archaeologist will be present during all log removal and replacement operations.
- A qualified archeologist will be present during removal of rock from the main shaft dump rock pile.

Wilderness & Roadless Values**Comment
#23**

Impacts to Wilderness/Roadless Character Because of its potentially adverse effects in the wilderness qualities of Mowry Peak, such as its solitude, naturalness, and backcountry recreation opportunities, this proposal threatens to eliminate portions of this Roadless Area from wilderness consideration.

The DEIS's discussion of impacts to the Mowry Peak Roadless Area – which is undeniably the most important and valuable resource within the Lost Cabin Mining project area – are scant, vague, and fail to address key information regarding the irreversible and irretrievable loss of potential wilderness, solitude, naturalness, and backcountry recreation opportunities. The DEIS and MBNF significantly downplay the impacts to the Mowry Peak potential wilderness and fail to take seriously the need to protect wilderness values and other resources associated with wilderness.

The failure to consider alternatives that impact the Mowry Peak Roadless Area in significantly different ways makes it not only difficult to believe the MBNF has taken a hard look at impacts to the Mowry Peak Roadless Area, but has taken adequate steps to minimize adverse environmental impact to National Forest surface resources in accordance with 36 CFR 228.8.

The DEIS fails miserably in its discussion of impacts to the Mowry Peak Roadless Area. The DEIS entirely fails to recognize the impacts of road reconstruction, mining activities, and trail construction as irreversible and irretrievable impacts to this potential wilderness. The DEIS fails to discuss the fact that, under the Lost Cabin Mine Plan of Operations, the acreage of the Mowry Peak Roadless Area that qualifies for wilderness will be permanently reduced. The MBNF must fully address this loss of potential wilderness and assess its impacts and take all measures necessary to minimize or prevent this loss in accordance with 36 CFR 228.8.

The DEIS also fails to address impacts to any of the natural and recreational values found in the Mowry Peak Roadless Area. For instance, roadless areas are known to provide exceptional backcountry recreation opportunities, scenic qualities, habitat for sensitive, threatened, and endangered species, clean and abundant water, challenging recreation opportunities, and opportunities for solitude. The DEIS is silent with regards to the impacts of the Lost Cabin Mining proposal to these qualities.

	<p>The DEIS's discussion of the impacts to the Mowry Peak Roadless Area fails to accurately account for non-recreation based roadless values as well as undervaluing recreational resources. Indeed, the impacts to the Mowry Peak Roadless Area are defined solely in terms of "recreation" impacts. Although recreation impacts are important and must be considered, roadless areas and wilderness resources provide more than simply recreation opportunities. The Multiple Use-Sustained Yield Act is clear that wilderness is an important resource that must be protected along with wildlife, water, and other values.</p> <p>Under the Lost Cabin mining proposal, parts of the Mowry Peak Roadless Area would no longer qualify for wilderness protection and would lose all backcountry value. (Letters #7, #8, #9, #18, & #19)</p>
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Response: See responses to Comments #2, #3, #4, #6, #7, & #12. The comments concerning loss of wilderness value is beyond the scope of the analysis, wilderness is analyzed at the Forest Planning level. Mowry Peak IRA was analyzed in the FEIS for the Roadless Area Review and Evaluation, January 1979, and identified non-wilderness. This IRA was not included for designation in the 1984 Wyoming Wilderness Act. The recreation report on p.3 discloses that the Mowry Peak IRA was analyzed in the 1985 Medicine Bow National Forest Plan and was **not** designated Proposed for Wilderness or as a Wilderness Study Area. Under Alternative D of the Forest Plan Revision FEIS the Mowry Peak IRA is **not** Proposed for Wilderness. The DEIS does disclose that there will be an effect on roadless by reducing the roadless acreage, though because the area is to be reclaimed this will be very minor. Further, the DEIS discusses that 4170H is an existing travel route.

The acreage of the Mowry Peak IRA can be found in Appendix C of the Forest Plan Revision FEIS. This particular roadless area has 6,241 acres of land. The DEIS does not give an acreage for the amount of IRA that would be immediately impacted by this activity. The District staff completed a Geographic Information System (GIS) computer exercise buffering the road in the roadless area 300 feet on either side of the road for a 600-foot corridor that would be the greatest impacted area in the IRA, this acreage is approximately slightly less than 157 acres. Though the mining claims cover 80 acres, the proposed action calls for actual ground disturbance of approximately 1/5th of an acre for prospect pits. Combining the total mining claim acreage and the 157 acres of access would bring the impacted IRA acres to approximately 237 acres. Ground disturbing activity for the prospecting will be less than an acre and the acreage of the road within the IRA is approximately 3.2 acres, a total of less than 5 acres of the 237. The actual ground disturbance in the IRA is much less than the 237 acres. Using the entire acreage would reduce the Mowry Peak IRA acreage to 6,004 acres.

The DEIS does disclose the cumulative effects of the proposed action on inventoried roadless area, solitude, naturalness and backcountry recreation opportunities on p.38. There will be an effect, during the time the actual mineral activity is occurring there will be a great effect, once the site is reclaimed the effect will be minimal to none. Wilderness need, potential, and capability are beyond the scope of this analysis, and the area is not wilderness and is not closed to mineral entry. In regards to the requirements of 36 CFR 228.8, the DEIS discloses the impacts to the Mowry Peak IRA, and it also covers all of the alternatives that were developed and analyzed. The DEIS also includes the mitigation measures that will allow for the operation to meet 36 CFR 228.8.

In the Plan of Operations the claimants list that the pits and roads will be reclaimed. The DEIS also discloses the requirement of closing and reclaiming of all road reconstruction, mining activities and trail construction. The DEIS does disclose that there will be an impact to the Mowry Peak IRA in a reduction of roadless acreage, which would be less than 237 acres as expressed above. The DEIS also discloses that there is already an existing roadbed included in the IRA that accesses the project area. Because of the occurrence of an existing roadbed and the requirement of reclamation of all disturbed ground, the prospecting activities and trail construction is not irreversible or irretrievable impact of potential wilderness.

The impacts to any of the recreational values found in the Mowry Peak IRA, including backcountry recreation opportunities, scenic qualities, challenging opportunities, and opportunities for solitude is disclosed in the DEIS, Chapter 3, p.38. The Mowry Peak IRA is not wilderness and as described above under Alternative D of the Forest Plan Revision FEIS the Mowry Peak IRA is **not** Proposed for Wilderness but has been allocated to Backcountry Recreation, Year-round Motorized (3.31). The discussion of Wilderness Capability, Availability and Need are found in Medicine Bow Revision FEIS Appendix C, pages C-66 through C-70. The Mowry Peak IRA is not wilderness, the DEIS discusses the impacts of non-recreation based roadless values on the roadless area.

The DEIS does disclose the effects to roadless. The Multiple Use-Sustained Yield Act does discuss “the establishment wilderness areas” in Section 2. More importantly direction and an exception is found in Section 1 containing the following language; “Nothing herein shall be construed so as to affect the use or lands or administration of the mineral resources of National Forest Lands.”

As discussed in the DEIS on pp.38-39, the Lost Cabin Mine proposal will impact the roadless area, especially during the actual mineral work. The acreage impact as outlined above is much less than the 237 acres, which will still leave the IRA with slightly more than 1,000 acres over the minimal size requirement for an IRA. But because the trails and pits will be recovered this is not an irretrievable or irreversible impact to the roadless area.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Recreation Specialist Report.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #24	<p>Inventoried Roadless Criteria According to the Forest Service Handbook (“FSH”) at 1909.12, Chapter 7, there are specific criteria that must be met in order to qualify as a potential wilderness. Some of these criteria include size, existence of improved roads, naturalness, and evidence of human activity. In particular, FSH 1909.12, 7.11a(4) prohibits the MBNF from including areas of “significant current mineral activity, including prospecting with mechanical earthmoving equipment” as qualifying for wilderness. There is no doubt that the Lost Cabin mining proposal, because it involves prospecting with mechanical earthmoving equipment and would lead to the development of an “improved road,” would preclude wilderness protection for parts of the Mowry Peak Roadless Area. (Letter #9)</p>
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Response: See responses to Comments #2, #3, #4, #6, #7, #12, & #23. The referenced Forest Service Handbook deals with Forest Planning and Plan Revision. The FEIS for Revised Medicine Bow Forest Plan includes the Mowry Peak Roadless write up that discusses Wilderness Capability, Availability and Need is found in Appendix C, pages C-66 through C-70. The Mowry Peak Roadless area is not allocated to management prescription 1.12 Proposed for Wilderness.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Recreation Specialist Report.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Wildlife

Comment #25	<p>Threatened, Endangered, and Sensitive Species The Lost Cabin mining proposal threatens to degrade habitat for rare and imperiled species, such as lynx and boreal toad. Habitat for these animals at risk – and opportunities for their restoration in the Medicine Bow – must not be jeopardized. The Preferred Alternative contains no data supporting a finding of “no significant impact” upon, and has no provisions for monitoring the effects of this project upon, any endangered, threatened, or indicator species.</p> <p>In discussing impacts to the threatened lynx, we can find no discussion of how the Lost Cabin Mine Plan of Operations will impact the lynx analysis unit that exists in the area. We can find no discussion of how the mining will impact denning habitat and winter forage habitat. Given this omission, it is difficult to see how the MBNF is fulfilling its duties under Section 7(a)(1) of the Endangered Species Act to conserve threatened and endangered species, as well as its duties to comply with the interim Lynx Conservation Agreement and Strategy.</p>
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We are very concerned that the MBNF has not adequately mapped lynx habitat on the forest. We are concerned that old growth lodgepole pine was not considered lynx habitat, that suitable habitat was mapped between clearcuts and other similarly unsuitable areas, and that linkage corridors were not adequately mapped. Furthermore, the mapping of lynx habitat seemed to overlook the presence of roads and other developments that are known to detrimentally impact lynx. For instance, suitable lynx habitat was mapped directly adjacent to Wyoming Highway 70, a paved, high traffic road. Paved, high traffic roads are especially known to detrimentally impact lynx. Additionally, the mapping seems to have overlooked the presence of snowshoe hare and other prey species of the lynx (e.g. red squirrel). For instance, no lynx habitat was mapped in the Beaver Mountain Roadless Area, despite the fact that snowshoe hare exist there. Because we have not yet been offered a formal opportunity to comment on lynx habitat mapping, despite the fact that these maps are directly utilized to analyze and assess potentially significant impacts to the human environment, we fully request the MBNF address the adequacy of lynx mapping through the Lost Cabin EIS. (Letters #7, #9, & # 18)

Response: See responses to Comments #16 & #17. Analysis for other threatened, endangered, or indicator species is included in the Wildlife Specialist Report and the BA/BE. Concerns for boreal toad are addressed in response to **Comment #17**.

Effects to lynx habitat are addressed in the BA/BE. The Biological Assessment (BA/BE) concluded that Lost Cabin mine exploration “may affect, not likely to adversely affect” Canada lynx (p. 16). The USFS provided the US Fish and Wildlife Service (USFWS) with the BA/BE and requested concurrence on bald eagle and Canada lynx. USFWS replied that Lost Cabin mine exploration “...is not likely to jeopardize the continued existence of the Canada lynx. No critical habitat has been designated for this species, therefore none will be affected. The impact to habitat for Canada lynx would be insignificant or discountable...” (10/14/2003, p.18).

Lynx habitat was identified in a joint effort with the USFWS in 2000. Some old growth lodgepole pine is a component of identified lynx habitat on the Forest; however, some lodgepole pine habitat was not included as lynx habitat due to aspect, slope, and moisture conditions. Lynx are susceptible to traffic mortality on highways as mentioned (Ruediger et al. 2000). Lost Cabin mine exploration does not affect the standards in the Canada Lynx Conservation Assessment and Strategy (Ruediger et al. 2000) that states “...allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU...” The proposal also complies with the standards, guidelines, and the mapping of lynx habitat included in the recently released January 2004 Rocky Mountain Region Lynx Amendment DEIS. Re-evaluating existing lynx habitat across the Forest is beyond the scope of this project.

The BA/BE identifies sensitive species that occur or have suitable habitat in the project area (p. 6 and Appendix B), habitat used by those species (Appendix C), and potential effects to that habitat (p. 7, 8, 17, 18, 22-30). The BA/BE also states that proposed activities are limited in scale, habitat disturbance, and time (p. 17). This is also stated in the DEIS (p.49). Project activities described in the BA/BE are sufficiently small that they are "...not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range-wide (p. 18)." The FEIS for the Medicine Bow Forest Plan Revision Appendix I (2003) indicates that individual sensitive species are distributed across the Forest.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #26	Northern Goshawk The Draft EIS indicates goshawk nests were found north of the project area. We have documented nests to the south and east historically which may be closer to the project than those found. Will there be any conditions to the project in the event searches find nests that may be impacted? (Letter #8)
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Response: See response to Comment #25. There are goshawk nests to the south and east of the project area. The nests north of the project area are the closest to proposed activities and are near or adjacent to the open road and closed road system used for proposed activities. Therefore, these nests are the ones that might be affected by proposed activities. As shown on p.75 of the DEIS, it is recommended that goshawks be monitored through surveys of the area during the life of the proposal. The bulk of the proposal, including the camping and crusher site, along with the area to be prospected along the top of 10,784' Vulcan Mountain, are well above the elevational zone for known goshawk nests on the Forest. Research conducted on the Forest by John Squires and monitoring by District wildlife biologists has never found a goshawk nest above 9,200' in elevation, with most nests occurring below 9,000'.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: Based on these comments a monitoring item which states "Monitor proposed use areas that occur in the vegetation/elevational range preferred by nesting northern goshawks during activities for new nesting activity" will be added to FEIS.

Comment #27	Species Viability The MBNF claims on numerous occasions that the Lost Cabin Mining Plan of Operations may impact individual sensitive species, but not jeopardize species viability. However, we cannot find any information or analysis on current sensitive species populations and distribution in the project area or forestwide that would provide any context for this finding.
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	<p>This finding seems especially flawed for some very rare and nearly extirpated sensitive species. For the boreal toad in particular, which is nearly extirpated from the BNF, it is difficult to believe that impacting one toad will not jeopardize the population. Given that the Lost Cabin Mining proposal threatens to degrade boreal toad habitat, it does not appear that the MBNF has made a reasoned and well-informed determination. (Letter #9)</p>
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Response: Concerns for boreal toad are addressed in responses to **Comments #16, #17, #25, and #26**. The BA/BE identifies sensitive species that occur or have suitable habitat in the project area (p.6 and Appendix B), habitat used by those species (Appendix C), and potential effects to that habitat (pp.7, 8, 17, 18, & 22-30). The BA/BE also states that proposed activities are limited in scale, habitat disturbance, and time (p.17). This is also stated in the DEIS (p.49). Project activities described in the BA/BE are sufficiently small that they are “..not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range-wide (p.18).”

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Wildlife BA/BE, Watershed, Soils, Aquatics & Fisheries Specialist Report.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

<p>Comment #28</p>	<p>Wildlife Disturbance We previously requested the Medicine Bow – Routt National Forests (MBRNF) to describe how the proposal will retain habitat characteristics associated with remoteness from disturbance (including motorized activities) for wildlife.</p> <p>The Draft EIS does not quantify to what extent the type, frequency, intensity, and duration of disturbance to wildlife will increase under the action alternatives.</p> <p>Also, will additional timing stipulations and other protections be imposed to protect nesting raptors, such as goshawks, and other species of concern from increased road traffic and mining disturbance?</p> <p>We are concerned with the frequency, duration and loudness of crusher operations. Given the quantity of samples to be taken, is it feasible to restrict crushing activities to certain predictable daytime periods to minimize wildlife disturbance? (Letter #8)</p>
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Response: See responses to **Comments #25, #26, & #27**. The DEIS (p.47) and the Specialist Report for Wildlife (p.14) indicate that disturbance is a natural critical factor that has always influenced the Sierra Madres. The DEIS states that road density is a concern for wildlife, specifically elk (pp.41, 45, & 49). Elk security areas (Hillis et al. 1991) were also addressed (Specialist Report for Wildlife, pp.8, 12, & 17) and the Sierra Madres have sufficient security areas (DEIS pp.42-43).

New information not included in previous analyses is also available. The DEIS for the revision of the Medicine Bow Forest Plan (2003, pp.3-255) indicates that the Northeast Sierra Madre Geographic Area, which contains Lost Cabin Mine, does not contain the percentage of security habitat suggested in research (Hillis et al. 1991). So, remoteness from disturbance as it is defined by elk security habitat is below the recommendation available in research.

The Specialist Report for Wildlife states that there will be an indirect loss of habitat "...due to displacement effects caused by human disturbance ..." (p.16).

Cumulative harvest, associated roads, and the resulting vegetation were analyzed in the Specialist Report for Wildlife (pp.14-15). These results also relate to remoteness to disturbance.

The Forest Plan (1985) has no wildlife standards and guidelines for "remoteness" but does have standards and guidelines for distance or timing from disturbance. These standards were reviewed and those relevant to the project were identified in the Specialists Report for Wildlife (pp.6-7) and the BA/BE (p.10). Additionally, the BA/BE analyzed guidelines from the Greater Yellowstone Bald Eagle Working Group (1996) and standards and guidelines from the Canada Lynx Conservation Assessment and Strategy (Ruediger et al. 2000).

In examining the effects to wildlife, there are only small differences between the Proposed Action and Alternative 2 including the location of the crusher and the campers and the type of vehicle used on WAY 4170H. Therefore, analysis in the BA/BE concluded there would be no real differences in effects to threatened, endangered, or sensitive species. The time period allowed for activities is different and the DEIS states that the allowed time period in Alternative 2 is limited to protect elk calving (DEIS p.vii). There is no alternative that restricts crushing to predictable daytime periods.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #29	Wildlife Surveys Our earlier comments suggested the need for wildlife inventories, including surveys for raptor nests, cavity nests, bat roosts, and pine marten dens, in order to identify where species could be negatively affected by road and mining activities. It appears these surveys were not conducted. (Letter #8)
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Response: Wildlife surveys were completed as stated in the DEIS (p.42), the Specialist Report for Wildlife (pp.6, 13, & 16), and the BA/BE (pp.10 & 15). See also the BA/BE (pp.6-7). Surveys were also conducted in spring 2003 from snowmobile to search for bald eagles and forest carnivores. None were located. Monitoring in the DEIS (p.75) also states that wildlife surveys for northern goshawk will continue.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #30	Bear Proof Containers Mining personnel should be required to store food and trash in bear-proof containers at the trailer site to avoid providing human food rewards and to reduce potential for nuisance problems. (Letter #8)
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Response: Recommended food storage mitigation is included in the DEIS (p.75).

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: Based on these comments a mitigation measure which states “Employ clean camping methods and food storage due to potential bear activity in the upper South Heather Creek” will be added to the FEIS.”

Comment #31	<p>Hunting Of the 2 action alternatives, Alternative 2 is better from a wildlife and habitat perspective because it minimizes physical disturbance due to roads and exploration activities, better avoids calving and other sensitive periods for wildlife, and because of relocating the crusher and trailer site to minimize disturbance. A number of our concerns and suggestions under Alternative 1 could also be incorporated (e.g. trash/food storage, consolidating work periods to expand the disturbance-free period). Requiring activity to stop on October 15 is better than the proposed action. However, allowing activity through the archery and rifle deer seasons will have already caused some displacement that may affect hunting recreation opportunities.</p> <p>The Draft EIS indicates there is less hunting pressure in the analysis area than some other areas of the Forest. The document should state this is due in part to the roadless area and terrain within the analysis area.</p> <p>We would like to see Broken Arrow Mining LLC out of the area by September 1, instead of October 15, so it doesn't interfere with elk bow hunting season which is very popular in this area.</p> <p>The saddle between the north and south peaks of Vulcan Mountain and the open area where Heather Creek originates are important pasture for elk. These places are also much more heavily hunted throughout the bow and rifle seasons than the draft statement suggests. (Letters #8, #14, & #21)</p>
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Response: See responses to Comments #5, #7, #8, #13, & #14. Information on the roadless area and terrain is available in the DEIS (pp.34-39). The DEIS indicates that hunting is the most popular activity (p.37). Included on p.75 of the DEIS, there is recommended mitigation that prevents operators from hunting on-site while conducting mining operations.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: Based on these and other comments a mitigation measure has been added to the FEIS stating “No motorized access will be allowed to claimants/operators for hunting behind the gated road system (NFSR 439).”

Comment #32	Vertical Diversity How does the vertical diversity of the analysis area compare to adjacent watersheds, given the Draft EIS identifies the area as having more natural landscapes? (Letter #8)
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Response: The natural looking landscape (DEIS p.35) refers only to defining the Mowry Peak roadless area characteristics and the quality of scenic resources as viewed by most recreationists, not as used as suitable habitat by wildlife. In fact, the Specialist Report for Wildlife (pp.16-17) indicates that 1,532 acres of the analysis area have been harvested and there are 27 miles of road in the analysis area. Analysis was conducted only inside the analysis area, so no vertical diversity was calculated for the adjacent watersheds.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #33	Old Growth Old growth is marginally meeting Forest Plan requirements. Consider measurement and other errors, it is likely that the area is below standards for providing good old growth habitat, particularly when constraints like proximity to roads and other activities are considered in a spatial analysis. (Letter #8)
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Response: See response to Comment #25 and #35. On pp.47-48 of the DEIS there is discussion of the effects of the proposal on old growth. Mature and older forests make up 64% of the area. Spruce-fir is the dominant forest type in the watershed. Road or trail construction would cause up to a 2-acre loss within a stand that has been identified as being old growth. Though this is the case, there is still an additional 3,819 acres that meet old growth characteristics within the project area, which exceeds the Forest Plan requirement.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #34	<p>Impacts to Elk Table 4 indicates that elk habitat capability is already below the Forest Plan requirement. Road density contributes to the low score. How will increased disturbance through project implementation be mitigated to maintain elk capability?</p> <p>It seems intuitive that less road reconstruction and smaller equipment would reduce elk capacity, but they are the same in Table 6. This seems to contrast with the statements regarding road density.</p> <p>It does not appear that the displacement of elk from roads is incorporated into the impacts analysis. It is only mentioned by reference to the Forest Plan FEIS. (Letter #8)</p>
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Response: Disturbance to wildlife was an issue that contributed to the development of Alternative 2. This Alternative does not allow activity until July 1 to protect elk calving, and moves the crusher site closer to existing disturbances. There are mitigation measures in the DEIS (pp15 & 75-76) to provide more effective road closures.

The less road reconstruction and smaller equipment of Alternative 2 does affect elk less. However, the habitat capability model (HABCAP) is not sensitive enough to detect the difference. That is why there are additional statements about effects of road density.

Displacement of elk by roads is incorporated into the loss of hiding and thermal cover. Also, displacement of elk by roads is discussed in the Specialist Report for Wildlife (pp.15 & 19).

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #35	<p>Hiding and Thermal Cover How does hiding cover in the vicinity of the project compare to the analysis area as a whole? Will big game be secure or displaced by the project? Would the project likely impact thermal cover (which is already below Plan standards), given the elevation and proximity to ridgelines?</p> <p>Within the margin of error for assessing security cover, can it be concluded that cover requirements are being met and will not be reduced by the project?</p>
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	<p>We note the inclusion of the Smith and Long (1987) reference in the bibliography but we did not find it in the text. This may have been eliminated from an earlier version or scoping document and the citation was not removed. We have often indicated to the MBRNF that this reference has little credibility among elk managers. (Letter #8)</p>
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Response: See responses to Comments #28 & #34. The immediate project, the 80-acre mining claim, does not contain any hiding cover. It is composed of high elevation grassland and stringers of spruce-fir stands. Approximately 75% of Way 4170H contains hiding cover. The Specialist Report for Wildlife analysis (p.14) indicated that 9.4 acres of hiding cover would be lost to road construction. Hiding cover is well distributed in large blocks across the rest of the analysis area. Elk are expected to be displaced during summer by the proposed activities (Specialist Report for Wildlife pp.15 & 19). The Specialist Report for Wildlife analysis (p.14) indicated that 0.3 acres of thermal cover would be lost to road construction. Though cover will be lost, there is no requirement in the 1985 Forest Plan for security cover. The reference to Smith and Long (1987) is from the Specialist Report for Wildlife (p.8) for describing hiding cover. Hillis et al (1991) was used to define security cover.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

<p>Comment #36</p>	<p>Impacts to Bats We previously raised concerns about bats and the potential for roosting in existing mineshafts and other features. To our knowledge, no surveys were conducted to this point. Bats are not addressed in any detail in the text of the Draft EIS, only in an appendix. (Letter #8)</p>
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Response: The BA/BE (pp.24-26) indicated that the collapsed mine shafts and the abandoned mining cabin were considered for potential roosting habitat. These areas were searched and neither pit was suitable roosting habitat – they were completely closed. The cabin had no sign of use by bats.

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #37	<p>Management Indicator Species Why weren't other management indicator species selected to monitor the impacts of the Lost Cabin Mining proposal? We request that species that indicate the health of higher elevation habitats, that indicate the health of riparian habitat, and that indicate the health of other habitats that may be potentially impacted be selected and monitored.</p> <p>Additionally, we cannot find any population trend data for the selected management indicator species that would provide a context for the analysis and assessment of impacts in the DEIS and that would provide support for the MBNF's finding that the proposed mining activities will not jeopardize native species and will minimize environmental impacts in accordance with 36 CFR 228.8. Further, the DEIS is silent with regards to the relationship between population trends of MIS and habitat changes, especially habitat changes caused by actions with similar impacts as the Lost Cabin mining proposal. (Letter #9)</p>
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Response: No riparian areas or wetlands that provide habitat for fish or amphibian species are present in the project area, so no aquatic Management Indicator Species were selected. Impacts that would create off-site impacts to fish or amphibian habitat have been mitigated by additional mitigation and monitoring measures added to the FEIS, so monitoring will focus on implementation effectiveness rather than off-site species unlikely to show effects from this project.

The Specialist Report for Wildlife (p.5-6) states why particular MIS were chosen for this project and why those MIS selected are appropriate for analyzing effects from the proposed activities. Notably, there are no proposed actions and no impact to Management Area 4B, hence there is no utility in selecting an MIS specifically for that Management Area. Though Management Prescription Area 4B within the Project Analysis Area does not meet Forest Plan standards and guidelines for elk, marten, and hairy woodpecker habitat capability, the proposed project does not change habitat capability for any of these MIS in the 4B Management Area.

All Management Indicator Species (MIS species) listed in the Forest Plan were reviewed to determine which species would be selected and further analyzed as project specific MIS. The table below summarizes the full list of Management Indicator Species and applies one of the following 3 categories to each species.

Category A) Certain Forest MIS species were not further analyzed in this project. Pre-field review was adequate to determine that these species were not affected or are extremely unlikely to be affected by the project proposal. One of the following reasons applies to those MIS species eliminated from further review, and is documented in the table.

1. The project proposal is outside of the known range of the species and/or the species is not likely to occur.
2. There are no documented records of species occurrence, habitat is generally not provided, and the species is unlikely to be present in the project area.

3. Larger scale evaluations suggest that a strong and viable population of the species exists, the project is expected to retain habitat in a condition that is suitable to occupancy in the analysis area, or site-specific population estimates are not available for the species.
4. Habitat used by the species is different than that being disturbed by the project proposal. Effects/impacts are not expected to occur to individuals within known existing populations.
5. Disturbance to habitat or individuals is sufficiently marginal, small in size and/or length of time that effects would not represent measurable effects to Forestwide populations.
6. Timing of the project proposal is such that no effects/impacts are expected.
7. Effects to this species is better represented by other MIS due to specific Forest Plan standards and guidelines for those other MIS species or known specific impacts to those other MIS species.

Category B) These species are both Forest MIS species and Region 2 Forest Service Sensitive Species or Federally Listed or Proposed species. Impacts/Effects were addressed (or dismissed) in the biological evaluation or biological assessment portion of this analysis.

Category C) Forest MIS species analyzed in further detail within the wildlife specialist report. Measurable impacts to habitat are expected and some estimates of local habitat, population and/or viability are available.

Highlights indicate those Forest MIS species analyzed in further detail in the wildlife specialist report.

Species Common Name	Suitable habitat	Category of Analysis (see earlier description)	Remarks
Elk	Forest, shrublands, grasslands	Category C – evaluated in wildlife specialist report.	
Mule Deer	Forest, shrublands, grasslands.	Category A7-Not selected as an MIS	Thermal and hiding cover, road analysis more applicable to elk.
Bighorn Sheep	Shrublands, rock outcrops	Category A1 – Not Selected as an MIS	
Turkey	Deciduous and Ponderosa Pine Forest	Category A1 – Not Selected as an MIS	
Bald Eagle	Generally near larger bodies of water,	Category B- addressed in Biological Assessment.	
Peregrine Falcon	Cliff habitat nearby	Category A4 – Not Selected as an MIS	
Black-footed Ferret	Prairie-dog towns	Category A1 – Not Selected as an MIS	
Pine Marten	Mature conifer forest	Category C – evaluated in wildlife specialist report.	
Beaver	Riparian Areas	Category A5 – Not Selected as an MIS	Minimal potential effects to wetlands.

Species Common Name	Suitable habitat	Category of Analysis (see earlier description)	Remarks
Red-backed Vole	Coniferous forests with downed timber	Category A3 – Not Selected as an MIS	Population data not available. Effects represented by marten.
Long-tailed Vole	Wet meadows, riparian, aspen, riparian shrub.	Category A5 – Not Selected as an MIS	Minimal potential impacts to wet meadows and riparian areas.
Dwarf Shrew	Talus slopes	Category B- addressed in Biological Assessment.	
Western Jumping Mouse	Marshy areas and riparian shrub	Category A5 – Not Selected as an MIS	Minimal potential impacts to wet meadows and riparian areas.
Osprey	Near larger bodies of water	Category A5 – Not Selected as an MIS	No habitat near large water bodies affected.
Goshawk	Mature forest with open understory. Water nearby.	Category B- addressed in Biological Assessment.	
White-tailed Ptarmigan	High elevation areas	Category A1 – Not Selected as an MIS	
Sage Grouse	Sagebrush flats	Category A1 – Not Selected as an MIS	
Blue Grouse	Forested areas	Category A3 – Not Selected as an MIS	Hunting season structure and harvest results indicate species is abundant.
Hairy Woodpecker	Aspen, conifer forests	Category C - evaluated in wildlife specialist report.	
Yellow-bellied Sapsucker	Migrant, low elevation woodlands	Category A5 – Not Selected as an MIS	Small potential effects to low elevation woodlands, effects to woodpeckers better represented by hairy woodpecker.
Lewis Woodpecker	Open Ponderosa pine forests	Category A1 – Not Selected as an MIS	
White-crowned Sparrow	Dense thickets of willow, sagebrush, or subalpine fir in the mountains.	Category A5 – Not Selected as an MIS	Potential effects to habitat minimal.
Ruby-crowned Kinglet	Coniferous forests.	Category A7– Not Selected as an MIS	Effects to hairy woodpecker better represent changes to conifer forest.
Yellow Warbler	Brushy stream-sides, willow	Category A5 – Not Selected as an MIS	Minimal potential impacts to riparian areas.
Cedar Waxwing	Open woodlands with berries	Category A4 – Not Selected as an MIS	No impacts to open woodlands with berries.
Sandhill Crane	Large wetlands	Category A4 – Not Selected as an MIS	No effects to large wetlands.
Boreal Toad	Mountain wetlands	Addressed in Fish/hydrology reports	

Species Common Name	Suitable habitat	Category of Analysis (see earlier description)	Remarks
Wood Frog	Mountain wetlands	Addressed in Fish/hydrology reports	
Smooth Green Snake	Lush riparian vegetation in Sierra Madre Mtns.	Category A1 – Not Selected as an MIS	

The 1985 Medicine Bow National Forest Plan (Forest Plan) goal for wildlife is “manage fish and wildlife habitats, including plant diversity, to maintain viable populations of all known native vertebrate species and meet population objectives of management indicator species.” Forest Plan includes objectives for elk and deer winter range carrying capacity but does not describe other population or habitat objectives (Amendment 6, p. II-11, 12). Forest Plan direction to meet the Forest Plan goal includes “4. Maintain habitat for viable populations of all existing vertebrate wildlife species” (p. III-30). The Standard and Guideline for this is “a. Habitat for each species on the forest will be maintained at least at 40 percent or more of potential.”

Forest Plan direction to meet the Forest Plan goal also includes “7. Provide habitat for management indicator species at a level no lower than 40 percent of potential...”(III-31). Standards and guidelines relevant to MIS for this project include requirements for hiding and thermal cover (III-34), retention of snags and coarse woody debris (III-15), and retention of old growth (III-14). Lost Cabin mine proposed activities will follow most standards and guidelines. It was identified in the specialist report for ecology and wildlife that the existing condition for elk was below Forest Plan requirements due to limited foraging areas and road density.

The Forest Plan defines monitoring for MIS (Amendment 4, p. IV-6) and describes the required monitoring in detail (Amendment 9, p. IV-40). The description includes the use of the R2 HABCAP model for computer model analysis of habitat capability trend such that “all Management Indicator Species will be provided habitat capability at a level no lower than 40 percent of potential.”

Analysis for Lost Cabin mine project follows described forest-wide goals, objectives, direction, and monitoring scheme to maintain required Forest Plan habitat for MIS as identified in the specialist report for ecology and wildlife and as mitigation identified in the DEIS.

Elk

The most extensive population and habitat relation data currently available for any MIS species is for big game animals. The analysis area occurs in the Sierra Madre Elk Herd Unit and Hunt Areas 13, 14, 15, 21, and 108. The Wyoming Game and Fish Department considers this elk herd to be a separate population from others on the Medicine Bow National Forest. There is no utility in combining separate populations that have little interaction between disjunct mountain ranges at the Planning Unit level. Wyoming Game and Fish Department's (WGFD) herd unit objective for the Sierra Madre elk herd is 4,200 elk. The population is estimated at approximately 5,500 elk (WGFD, 2001 Job Completion Report). The current population is above herd objective and the trend is decreasing; however, the management goal is to decrease the herd population to approach the herd objective through harvest strategy. Population changes for the last several years have been: 1997 (8,000), 1998 (7,700), 1999 (7,400), 2000 (7,200).

The condition of this elk population is consistent with the habitat capability analysis. Proposed activities will lower the hiding cover by less than 15 acres and thermal cover by less than 1 acre. Excavation will cause the loss of up to 0.5 acres of foraging habitat. The northwest edge of a block of security habitat will be lost due to the use of 4172. Elk will typically be displaced ½ mile by human disturbance associated with proposed activities (USDA 2004). There is mitigation for effective road closures in the DEIS for this project. In summary, the effects of the Proposed Action will slightly reduce habitat available for elk. This reduction in habitat coincides with the WGFD efforts to manage a smaller elk herd in the Sierra Madre.

Hairy woodpecker

Contrary to information in the original specialist report, population data is available for the hairy woodpecker. Hairy woodpeckers have been found to be well-distributed within suitable habitat. Fifty-one were located within 7 watersheds across the Forest during field surveys in summer 2003. No hairy woodpeckers were located during field surveys for Lost Cabin Mine.

Population data for the hairy woodpecker results from the National Breeding Bird Survey (BBS) (Sauer et al. 2001). Populations of hairy woodpeckers are considered stable to slightly increasing in Wyoming (4.1%/year, $p=0.52$, 95% C.I. -8.1 to 16.3) and stable to slightly decreasing in the southern Rockies, which includes the Medicine Bow-Routt National Forest (-2.2%/yr, $p=0.61$, 95% C.I. -10.5 to 6.1).

BBS data includes routes on the Medicine Bow National Forest. BBS routes with information on the Forest include Fox Park and Fletcher Peak. Warbonnet route did not have hairy woodpecker observations. BBS routes adjacent to the Forest boundary with hairy woodpecker data include Savery. The Riverside and Harmony routes adjacent to the Forest had no data. The tables below display this BBS information. This BBS information is also available at www.mbr-pwrc.usgs.gov/bbs/.

BBS results for hairy woodpecker on Forest.						
Route	Birds/route	Trend Estimate	P value	Years	Variance	Avg. Count
Fox Park	1.6	0.99	0.93	8	12.30	1.5
Fletcher Peak	0.67	-7.83	0.39	20	9.19	0.65

BBS results for hairy woodpecker adjacent to Forest						
Savery	3.67	43.33	0.00	4	1.80	3.00

This additional search of BBS information indicates that hairy woodpeckers generally portray an increasing trend on and adjacent to the Forest. However, there is variability among routes as noted for Fletcher Peak. These results do not differ substantially from BBS results for Wyoming or the southern Rockies, suggesting a near stable population.

Hoover and Willis (1984) indicate that a sympatric species, the northern three-toed woodpecker requires approximately 100 acres of optimum habitat per breeding pair in the same structural stages of conifer and aspen vegetation (mature and older). Hoover and Willis (1984) also indicate that a minimum viable population would be 10 breeding pairs. Secondly, there were 13 hairy woodpecker nests located within approximately 14 miles² of forested habitat in the Snowy Range of the Medicine Bow-Routt National Forest (Loose 1993). Less than half of the habitat surveyed by Loose was mature or older forested habitat. Therefore, it is reasonable to expect hairy woodpeckers to require 100 acres of habitat/ breeding pair. There are 6,032 acres in the analysis area that could provide habitat for approximately 60 breeding pairs, if all acres are optimum habitat and habitat acreage is the single limiting factor. Proposed activities could remove 2 acres from each of 2 potential nesting territories. Sufficient habitat would remain after proposed activities for a viable population to remain on the Forest.

These population results are consistent with habitat capability (HABCAP), habitat structural stage analysis, and Forest Plan standards and guidelines analysis in the specialist report for ecology and wildlife. Forest Plan requirements for vertical diversity and old growth, which would indicate multiple stories of vegetation to provide food and shelter, will be met. The hairy woodpecker would be minimally affected across the Forest by the proposed treatments. Appendix D (p.50) of the FEIS for the Medicine Bow Forest Plan Revision (2004) indicates that late successional-old growth habitat, which is potential habitat for hairy woodpeckers, is well distributed across the Forest. Analysis indicates that sufficient habitat exists to support viable populations of hairy woodpeckers across the Forest considering the availability of existing vegetation for providing habitat.

American Marten

Extensive radio telemetry aided studies of American marten were conducted from 1985 through 1995 in the Coon Creek and East Fork Encampment River watersheds on the eastern end of the Sierra Madre Mountains. Ninety-six individuals were captured during the study. Mean home range sizes were 1,652 acres in summer and 1,462 acres in winter for females, and 4,494 acres in summer and 3,602 acres in winter for males. Martens were found to be uncommon but widespread within suitable habitat (Raphael 1986a). Sixteen known individual martens and more than 270 sightings were documented in that area. No martens were observed during summer wildlife surveys, and no martens or their tracks were observed during spring snowmobile surveys in the Lost Cabin Mine project area.

The marten is dependent on older forest. Older forest is abundant in the analysis area (Table 3 of specialist report for ecology and wildlife). There are 6,015 acres of mature or older lodgepole pine and spruce-fir in the analysis area. Construction/reconstruction of the historic route occur in these areas. There will be a direct loss of approximately 4 acres. There will also be a small indirect loss of habitat associated with road travel and activity and noise at the crusher site and mine excavation. Total effects within the project area would not accumulate to meet the threshold for loss of marten habitat by conversion of 25% to 30% of forested habitat to fragmentation.

These results are consistent with HABCAP analysis that showed no change in habitat capability as a result of proposed activities. Overall, direct and indirect effects would impact less than 1% of 1 male or female home range. The marten would be minimally affected across the Forest by the proposed activities. Appendix D (p.50) of the FEIS for the Medicine Bow Forest Plan Revision (2004) indicates that late successional-old growth habitat, which is potential habitat for martens, is well distributed across the Forest. Analysis indicates that sufficient habitat exists to support viable populations of martens across the Forest, considering the availability of existing vegetation for providing habitat.

Additional Citations include:

Hoover, R. L., and D. L. Wills, eds. 1987. Managing forested lands for wildlife. Colorado Division of Wildlife, in cooperation with USDA Forest Service, Rocky Mountain Region. Eastwood Printing & Publishing, Denver. 459 pp.

Loose, S.S. 1993. Woodpecker Habitat Use in the Forests of Southeast Wyoming. M.S. Thesis University of Wyoming. 97 pp.

Raphael, M.G. 1986a. Habitat Selection and Distribution of Marten in Relation to Fragmentation of Subalpine Coniferous Forest. Study Plan RM-4201.2-4. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Laramie Wyoming.

Sauer, J.R., J.E. Hines, and J. Fallon. 2003. The North American Breeding Bird Survey, Results, and Analysis 1966 – 2002. USGS Patuxent Wildlife Research Center, Laurel Md. <http://www.mbr-pwrc.usgs.gov/bbs/bbs2001.html>

USDA Forest Service. 2003. Final Environmental Impact Statement for the Revised Land and Resource Management Plan. Medicine Bow National Forest. Laramie, Wy.

Wyoming Game and Fish Department. 2002. Annual Big Game Herd Unit Reports-Green River Region. Cheyenne, Wy. 479 pp.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record Wildlife BA/BE.**

Changes to FEIS/Project Record: The information above has been added to the project record and is considered part of the FEIS.

Comment #38	<p>Fragmentation Studies have found that roads contribute greatly to fragmentation on the Medicine Bow National Forest. Reed et al. (1996) in particular found that excessive roads are a huge problem on the MBNF in terms of the adverse ecological impacts they pose to interior forest species, such as marten, red-backed vole, and others. Unfortunately, the DEIS entirely fails to address the potentially significant impacts of fragmentation associated with the proposed road reconstruction and trail construction. (Letter #9)</p>
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Response: See responses to Comments #25, #26, #27, #33, #34, #35, & #39. Earlier responses address the effect of roads as analyzed in the Specialist Report for Wildlife and Biological Assessment. Finally, proposed activities will clear and slightly expand the width of several existing roads. There would be no new roads to increase fragmentation.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Wildlife BA/BE.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #39	<p>Impacts to Vegetation The 30 acres of grass/forb converted to excavation seems to contrast with the statement on page 12 about 0.2 acres.</p> <p>p. 49. The impacts due to mining excavation are not the only ones related to the proposed action. The Draft EIS should include acreages for all project-associated activities.</p> <p>A table like that on p. 44 should also be presented for Alternative 1. (Letter #8)</p>
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Response: The 30 acres of disturbance were derived from an earlier version of the Plan of Operations from the proponents. The final Plan of Operations was provided in May 2003 and indicated less disturbance than previously assumed. The Specialist Report for Wildlife-Corrections (09/12/2003) corrected the 30 acres of disturbance to 0.5 acres of disturbance, assuming that actual direct disturbance to wildlife habitat would be slightly larger than the excavation holes of 0.2 acres. The BA/BE and Specialist Report for Wildlife analyzed other direct, indirect, and cumulative effects including roads, disturbance/displacement, and security, among others.

VEGETATION	PROPOSED	FOREST PLAN ¹	ALTERNATIVE 2	FOREST PLAN ¹
Horiz./Vert. Diversity	6.1 acres to road	Meets Requirement	2 acres to road	Meets Requirement
Hiding Cover	22 acres to road/crusher	Meets Requirement	12.3 acres to road	Meets Requirement
Thermal Cover	5 acres to road	Below Requirement	0.3 acres to road	Below Requirement
Desig. Old-Growth	2 acres to road	Meets Requirement	0.5 acres to road	Meets Requirement
Grass/Forb	0.5 acres to mining	Meets Requirement	0.5 acres to mining	Meets Requirement

DEIS/Project Record: DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Wildlife BA/BE

Changes to FEIS/Project Record: This information has been added to the project record.

Cumulative Effects

<p>Comment #40</p>	<p>Cumulative Impacts to Area Resources The cumulative effects analysis should be more complete, given existing and historical mining interests, and the potential for increased mining following approval of this exploration Plan of Operations.</p> <p>The cumulative effects discussion ignores some other ongoing activities, especially in the Cow Creek drainage, like cabin sites, state land forestry practices and other activities.</p> <p>We again raise concern that the cumulative effects analysis only considers USFS-related actions and not those of private in-holdings and other uses.</p> <p>Analysis of the project should also address cumulative effects (both past and future) of mining in the area, not just of this mining proposal.</p> <p>The potential impact of the preferred alternative upon future and more extensive mine development that might occur – as well as the cumulative impacts of past mining to wilderness, wildlife, and water quality – must be give full consideration. The DEIS does not address this issue, either.</p> <p>We urge you to fully address the cumulative impacts of mining to wilderness, wildlife and water quality. (Letters #7, #8, #10, & #13)</p>
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Response: See responses to Comments #12, #15, #16, #17, #18, #20, #23, #25, #27, #28, #33, #34, #35, #37, & #38. The Cumulative Effects of the proposal is discussed for area resources in *Chapter 3 Existing Condition and Environmental Consequences* section of the DEIS (pp.20-54). Also see *Past, present, reasonably foreseeable future actions* analyzed in Lost Cabin Mine DEIS pp.20-21. This section includes discussion of timber sale activity, road construction, big game hunting, grazing activity, and mining activity. Of all the historic mining activity located within the Grand Encampment Mining District only the Ferris Haggerty and Rambler mines were developed into large producing mines. Many other workings in the area were little more than prospecting holes or discoveries, many of which over the course of the past 100 years have sloughed in and revegetated. Lands, Minerals, and Non-recreation Special Uses – DEIS pp.21-22 address existing condition and cumulative effects for identified uses in the area. The Forest Service does not analyze potential future mine development. Analysis is based upon the Plan of Operation submitted by Broken Arrow Mining.

At this time the agency does not know of any future extensive mine development, though it could occur. Future extensive mine development could occur, but it would be speculation to say when it might occur. The analysis is for access and prospecting, extensive mine development will require future additional analysis. The area is not wilderness; wilderness analysis is conducted at another level. The DEIS does disclose there will be impacts to roadless, a quantitative measure of this is acreage, and the impacted amount is 237 acres.

Past mining contributed to the habitat evaluated in the Existing Condition section, the analysis for Forest Plan standards and guidelines, the MIS analysis of the Specialist Report for Wildlife and in the environmental baseline section and analyses in the BA/BE. Effects of any potential future mining cannot be speculated. Cumulative effects were evaluated in the Specialist Report for Wildlife (pp.16-20) and throughout the BA/BE.

Cumulative effects to water quality were addressed in the DEIS. If more extensive mining operations are proposed, additional NEPA documentation and analysis would be necessary.

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record** *All Resource Specialist Reports*.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

<p>Comment #41</p>	<p>Cumulative Impacts to Inventoried Roadless The discussion of cumulative “recreation” impacts to the Mowry Peak Roadless Area is vague and inaccurate. The DEIS states, “Solitude, scenic value, landscape, recreation experience, naturalness and primitive experience are all subjective and based on individual values.” DEIS p. 38. While this may be true, it does not change the fact that through the current forest planning process, the MBNF has found the Mowry Peak Roadless Area is not only capable of being designated as wilderness, but suitable as well. While this finding may be somewhat subjective, it has nonetheless been made, indicating that Mowry Peak is exceptionally special. The cumulative impacts discussion is entirely inadequate and represents an attempt by the MBNF to avoid discussing the actual impacts the Lost Cabin Mining Plan of Operations poses to the Mowry Peak Roadless Area and potential wilderness. (Letter #9)</p>
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Response: See responses to Comments #5, #6, #7, #8, #12, & #23. The DEIS on p.38 discloses that the IRA will be impacted, the acreage amount of this impact is 237 acres. During the actual road use and prospecting the impact will be the greatest, upon the area being reclaimed at the end of the project the impact will be greatly reduced. The area is not wilderness, which analysis is found in the FEIS for the Revised Medicine Bow National Forest Plan. The Mowry Peak Roadless write up that discusses Wilderness Capability, Availability and Need is found in Appendix C, pages C-66 through C-70. While the current forest planning process did analyze the Mowry Peak Roadless Area as capable and suitable, the Revised Forest Plan Allocates this area to Backcountry Recreation, Year-round Motorized 3.31, and under this allocation it is not wilderness.

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record Recreation Specialist Report.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

<p>Comment #42</p>	<p>Cumulative Impacts of ATV Use While the MBNF discloses that illegal ATV use is a huge problem in the project area and the Mowry Peak Roadless Area in particular, there is no discussion of the cumulative impacts this activity poses to water quality, soils, wildlife and wildlife habitat, fish and fish habitat, the wilderness values of the Mowry Peak Roadless Area, recreation, and scenery. In fact, while the DEIS discloses this illegal activity is very widespread, the MBNF uses this cumulative impact as a means to downplay and inaccurately assess the significance of environmental impacts. For instance, the MBNF claims on numerous occasions in the DEIS that, because of ATV use, the recreational value of Mowry Peak Roadless Area is already diminished. This would tend to indicate that, cumulatively, the proposed Lost Cabin Plan of Operations would only add to this significant impact. This would also tend to indicate that more effective and restrictive mitigation measures would be needed to fully mitigate the impacts of the Lost Cabin Plan of Operations. However, the MBNF seems to interpret the cumulative impact of illegal ATV use as being, existing yet posing no environmental impacts. This is incredibly flawed and indicates the MBNF has not taken a hard look at the impacts of illegal ATV use, especially in the Mowry Peak Roadless Area. (Letter #9)</p>
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Response: See responses to Comments #5, #7, #8, #12, #18, & #23. In the DEIS, pp.34-36, there is a discussion of illegal ATV use found in every paragraph under *Inventoried Roadless Areas*, this includes the following paragraph; Natural Integrity and Appearance, Opportunities for Solitude and Remoteness, Primitive Recreation Opportunities, Manageability and Boundaries. These paragraphs describe roadless characteristics and assigns an existing condition rating for each characteristic, this does disclose that there is already an effect to the roadless area because of the illegal use. The IRA is not wilderness, which is planned at the Forest Plan level and is beyond the scope of the analysis.

The mitigation is found in the DEIS pp.15-16. The mitigation covers both the operation and illegal ATV use. Mitigation for illegal ATV use will be for the District to work on the road closure to prevent illegal use, additional law enforcement, and monitoring.

DEIS/Project Record: DEIS *Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. **Project Record** *Infrastructure and Recreation Specialist Reports, Roads Analysis*.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Forest Plan

Comment #43	<p>Management Area Emphasis Under Forest Plan Revision How does the project affect proposed alternative management area emphases under the revised Forest Plan?</p> <p>The Draft EIS indicates that the Lost Cabin Mine is within the Mowry Peak IRA that is classified under the Forest Plan for semi-primitive motorized recreation. What are the alternative management emphases for the Forest Plan Revision? (Letter #8)</p>
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Response: See responses to Comments #23. As cited beginning on p.1 of the DEIS, The Lost Cabin Mine proposal was analyzed under and tiered to the 1985 Medicine Bow Land and Resource Management Plan (1985 Forest Plan). Though this is the case, as shown beginning on p.ii of the DEIS, the analysis did take into consideration the designated boundary of the Mowry Peak IRA that was identified under both the National Roadless Rule and current Medicine Bow Forest Plan Revision efforts. Not discussed in the DEIS, the Lost Cabin proposal has been compared to the selected alternative (D FEIS) Medicine Bow National Forest Revision, which was approved on December 27, 2003. Most of the historic road access (4170H) and all the prospect pits fall within a 3.31 Backcountry Recreation – Year-Round Motorized management area, while the open and gated road access, crusher, and campsite are within a 5.13 Forest Products management area under the Revised Plan. Under the Revised Plan, mineral development is allowed in both the 3.31 and 5.13 management areas. The analysis found that (preferred) Alternative 2 as designed with proposed mitigation measures is consistent with management area direction and standards and guidelines of the Revision.

DEIS/Project Record: *DEIS Abstract* pp.ii-iii, *Summary* pp.iv-ix, Chapter 1 *Purpose and Need for Action* pp.1-10, Chapter 2 *Alternatives, Including the Proposed Action* pp.11-19, and Chapter 3 *Existing Condition and Environmental Consequences* pp.20-54. Project Record *All Resource Specialist Reports*.

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Reclamation

Comment #44	<p>Reclamation Measures We are concerned about the adequacy of reclamation at exposed, high elevation sites. Has any successful reclamation taken place to date at the site and what is the probability of success with future reclamation?</p> <p>Revegetation and other reclamation measures should be specified here. Gates should be locked and opportunities to bypass gates should be eliminated. (Letter #8)</p>
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Response: A reclamation plan is a required part of the Plan of Operation and must be approved prior to operating. These reclamation/revegetation activities are standard operations for all Forest activities as required by the Medicine Bow National Forest Land and Resource Management Plan. Gates are currently locked, and will continue to be locked. Bypass into this closed road system will be eliminated at all locations identified.

The project proponent must also comply with the State of Wyoming Environmental Protection Performance Standards for Non Coal Mines (WYDEQ 2000) DEIS, p.6. The Land Quality Division (LQD) administers and enforces all statutes and regulations on land disturbances dealing with mining and reclamation within the State of Wyoming. The LQD has the authority to require permitting and licensing of all operator actions of surface and underground mine facilities. Each mining operation must be covered by a Reclamation Bond in the event the operator is unable to fulfill the reclamation requirements. The LQD's authority derives from the Federal Surface Mining Reclamation and Control Act and the Wyoming Environmental Quality Act.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics and Fisheries Specialist Report.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Geology

Comment #45	<p>Geology of Area For this level of mining activity (exploration), we recommend that the FEIS include a discussion of the geology, petrology, mineralogy, and anticipated geochemistry in the project area. Are sulfide minerals anticipated, or is this area more characteristic of oxide materials? Are any of the sulfidic minerals associated with generating acid mine drainage present such as sphalerite and galena in mineral assemblages with high percentages of iron sulfide?</p> <p>We anticipate that there is sufficient information already available on geology, petrology, mineralogy in the area from reports prepared on the historic mining district and previous mines on Vulcan Mountain, and the exploration work already done to site test pits. (Letters #16 & #17)</p>
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Response: See responses to Comments #15, #16, #17, #18, #19, and #20. This is a small exploration project, not a mineral extraction or processing operation. Part of the purpose of extracting samples and assaying materials is to determine the site-specific mineralogy and host rock characteristics. Test holes will be opened, samples removed, and then filled in after assay results are obtained. Only one hole will be open at a time, and none will remain open over the winter. Shafts will be opened only to the extent that timbers and other materials that have fallen in will be removed to a depth of 10-12 feet and samples taken at that depth. Materials will then be placed back in the shafts. No residual materials will remain at the crusher site because all of the material crushed will be removed and submitted for assay. Because this is an exploration process, there will be no waste rock piles established.

The Forest Service has processed many of these small exploration projects in the past and has not needed to discuss anticipated geochemistry, mineralogy, petrology, or geology at this stage. If the proponents decide the results of their assays are favorable enough that they submit a Plan of Operations for mining activity, the Forest Service will certainly address all aspects of the mineral deposits and geochemistry as part of that NEPA process.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Lands, Minerals & Non-recreation Special Uses Specialist Report.*

Changes to FEIS/Project Record: No changes were made to the FEIS based on these comments.

Comment #46	Slope Failure With the geological information collected at assess acid mine drainage potential, the FEIS should also assess potential of the area for slope failure and any environmental impacts associated with slope failure such as additional erosion and sedimentation. (Letter #16 & #17)
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Response: See responses to Comments #15, #16, #17, #18, #19, and #20. The majority of activities associated with this proposal (discovery pits, shafts, adits and ATV trails) would occur on the top slopes of Vulcan Mountain. The potential for slope failure due to the occurrence of serpentinites, talc, or chlorite dominated schists is low because these rock types do not occur in the area. The soils where the mining activities would occur are Medicine Bow Soil Type 44, which has a low mass wasting factor. The soils lower down on the slope where the historic road and crusher site are located are soil types 31 and 112. Both of these soils have a moderate rating for mass failure. Mass failure is usually associated with saturation of a road fill or hillside, which reduces the soil strength sufficiently to result in slope failure. The historic road has shown no signs of past slumping or mass failure. This project would reduce failure hazard by reducing the amount of water that runs down the road and the resulting saturation of road fill. The crusher site would be located on as level a site as possible and would require little additional excavation. The site would be located a minimum of 300 feet from any wetland or stream channel. Surface runoff from rainstorms would be diverted around the site, so saturation of the area would not occur. The risk of mass failure from this ground disturbance is considered to be negligible.

DEIS/Project Record: *DEIS Abstract pp.ii-iii, Summary pp.iv-ix, Chapter 1 Purpose and Need for Action pp.1-10, Chapter 2 Alternatives, Including the Proposed Action pp.11-19, and Chapter 3 Existing Condition and Environmental Consequences pp.20-54. Project Record Watershed, Soils, Aquatics & Fisheries Specialist Report.*

Changes to FEIS/Project Record: See response to Comment #15, (additional mitigation has been added to the FEIS).



Wyoming Department of State Parks and Cultural Resources
State Historic Preservation Office

Richard L. Currit, SHPO
2301 Central Avenue
Barrett Building, 3rd Floor
Cheyenne, WY 82002
Phone (307) 777-7697
FAX (307) 777-6421

November 19, 2003

Melissa Martin, ID Team Leader
USFS Laramie Ranger District
2468 Jackson Street
Laramie, Wyoming 82070

RE: USFS Medicine Bow-Routt National Forests, Brush Creek/Hayden Ranger District: Lost Cabin Mine Plan of Operations, Draft Environmental Impact Statement (DEIS). Carbon County. (SHPO File # 0102CLH043)

Dear Ms. Martin:

We have reviewed the referenced DEIS, as requested by Mary H. Peterson's (Medicine Bow-Routt NF Forest Supervisor) letter of October 16, 2003. Thank you for the opportunity to comment.

To reiterate (see Lost Cabin Mine Scoping Notice 2002 correspondence), consideration and management of cultural/heritage resources for federal undertakings is primarily accomplished in accordance with Section 106 of the National Historic Preservation Act (NHPA) and Advisory Council regulations 36 CFR Part 800. In part, these regulations call for survey, evaluation and protection of significant historic and archeological sites that could be affected by the proposed action. This office will provide specific comments to the USFS, on the project's effect on cultural/heritage resource properties, when we review the cultural resource documentation called for by 36 CFR Part 800; which we assume is forthcoming as indicated by statements on page 51 of the DEIS.

We also wish to express that Alternative 2 (USFS Preferred Alternative) appears to be most in accord with NHPA objectives; given that Alternative 3 (No Action) is not viable given the special limitations imposed on the NEPA and NHPA analysis processes by this undertaking.

Please refer to the above SHPO project control number (0102CLH043) in future communications dealing with this project. If you have any questions please contact Robert York at 307-742-3054, or me at 307-777-6311.

Sincerely,

Judy K. Wolf
For Judy K. Wolf
Review and Compliance Program Manager

cc: Kyndra Miller, Wyoming SPC

Dave Freudenthal, Governor



Phil Noble, Director



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

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DEC 15 2003

fax'd to
Scott A.
12/16/03

Ref: 8EPR-N

Mary Peterson *MP*
Forest Supervisor
Medicine Bow-Routt
National Forests
2468 Jackson Street,
Laramie, Wyoming 82070

Re: [REDACTED] FEIS, # 030487

Dear Ms. Peterson:

The Environmental Protection Agency -- Region 8 (EPA) has reviewed the *Draft Environmental Impact Statement for Lost Cabin Mine*, in the Brush Creek/Hayden Ranger District. The DEIS assesses the environmental impacts of mineral exploration at the Lost Cabin Mine and improving road access to the mine. The mine is located in the Sierra Madre Mountains near Encampment, Wyoming. We submit the following comments in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

EPA's main concern with this project is water quality, specifically the potential of the test pits, waste rock and shaft reopenings to generate acid mine drainage. As we mentioned in our scoping letter of May 2002, this area already has one mine with serious acid mine/rock drainage problems, the Ferris Haggerty Mine. Discharges from Ferris Haggerty mine, polluted with copper have eliminated aquatic life downstream of the mine for several miles. For this level of mining activity (exploration), we recommend that the FEIS include a discussion of the geology, petrology, mineralogy, and anticipated geochemistry in the project area. Are sulfide minerals anticipated, or is this area more characteristic of oxide minerals? Are any of the sulfidic minerals associated with generating acid mine drainage present such as pyrite, marcasite, pyrrhotite, or chalcopyrite? Are there other sulfide minerals such as sphalerite and galena in mineral assemblages with high percentages of iron sulfide? For more information about minerals that generate acid mine drainage when disturbed, please see *Preliminary Compilation of Descriptive to Environmental Mineral Deposit Models*, edited by Edward A. du Bray, U.S. Geological Survey Open-File Report 95-0831 available at: <http://pubs.usgs.gov/of/1995/ofr-95-0831/>.

17

For this level of exploration (8 test pits), we do not think there is a need for laboratory testing of acid generating potential as is typically done for hard rock mine development. We anticipate that there is sufficient information already available on geology, petrology, mineralogy in the area from reports prepared on the historic mining district and previous mines on Vulcan Mountain, and the exploration work already done to site the test pits. Existing mine workings may also provide additional information. If the investigation of the geology and mineralogy finds mineral assemblages which are likely to cause acid mine drainage, the FEIS should include mitigation or avoidance measures to protect water quality.

We recommend that the test pits be more fully reclaimed by refilling the pits. Currently on page 12 of the DEIS, the plan is to only rip and reseed the test pits.

The discussions of Erosion and Sedimentation (pages 28 & 30) for the proposed alternatives concentrate on erosion controls for roads and ATV/bobcat trails. Will any additional erosion control be necessary for some of the wider areas of disturbance such as the crusher site and the material removed from the test pits? Controls such as sediment basins, ditches with check dams, brush barriers and berms, and straw, hay or rice wattles - not bales - are generally effective and low cost means for reducing erosion and sedimentation in disturbed areas. Maintenance of these structures should also be a part of the operation plan.

Generally, the Wyoming Platinum-Palladium-Nickel Province is characterized by occurrences of serpentinites and schists of varying petrologies. Serpentinites, and many talc, tremolite, or chlorite dominated schists, tend to be much more susceptible to slope failure events once exposed to the earth's surface. With the geological information collected to assess acid mine drainage potential, the FEIS should also assess the potential of the area for slope failure and any environmental impacts associated with slope failure such as additional erosion and sedimentation.

A section should be added to the FEIS explaining the NEPA and regulatory processes that will occur if Broken Arrow Mining (or successor) wants to expand exploration beyond the eight test pits or once to develop a mine.

EPA greatly appreciates the succinct and focused EIS prepared for this project. Based on the procedures EPA uses to evaluate the potential effects of proposed actions and the adequacy of the information in the DEIS, the preferred alternative will be listed in the Federal Register in the category EC-2 (EC - Environmental Concerns, 2 - Insufficient Information). This rating means that the review identified environmental impacts that should be avoided in order to fully protect the environment and the DEIS does not contain sufficient information to thoroughly assess environmental impacts that should be avoided to fully protect the environment.

We appreciate your interest in our comments. If you have any further questions, please contact Dana Allen of my staff at (303) 312-6870.

Sincerely,



Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection
and Remediation

Enclosure



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
P.O. Box 25007 (D-108)
Denver, Colorado 80225-0007



December 3, 2003

ER 03/890

Melissa Martin, ID Team Leader
Laramie Ranger District
Medicine Bow-Routt National Forest
2468 Jackson St.
Laramie, Wyoming 82070

Dear Ms. Martin:

The Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Lost Cabin Mine, Medicine Bow-Routt National Forest, Carbon County, Wyoming and provides the following comments.

Fish and Wildlife Resources

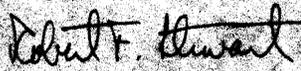
The U.S. Fish and Wildlife Service (USFWS) Wyoming Field Office issued a Biological Opinion on the proposed project October 14, 2003. The Office concurred on the "may affect, but not likely to adversely affect" determination for the bald eagle and issued a finding of "no jeopardy" to the continued existence of the Canada lynx.

Specific Comments on Effects to Ground Water

Page 28, Chapter 3. Affected Environment and Environmental Consequences, Section Water Quality, second paragraph: The second sentence in the paragraph states that because the existing mine shafts are constructed vertically, ground water, if present, is prevented from leaving the shaft. It is not clear how the vertical construction could prevent ground water at depth from leaving, unless the sides and bottom of the shaft are sealed (made impermeable). Furthermore, no information is provided on the depth to ground water or how deep the mine shafts are. We recommend that the section be expanded further to discuss the occurrence of ground water (quantity and quality, and depth to ground water) in the project area, especially the area containing the mine shafts and prospecting pits and to explain if the shafts intersect the water table and how water is prevented from migrating through the mine shafts.

The Department appreciates the opportunity to comment on the Lost Cabin Mine DEIS. Please address any questions or concerns relative to these comments to Trish Riley with USGS at (703) 648-6822. Please address comments on the Biological Opinion to Jodi Bush, Assistant Field Supervisor, USFWS Wyoming Field Office at (307) 772-2374, extension 31.

Sincerely,



Robert F. Stewart
Regional Environmental Officer

**WYOMING
GAME AND FISH DEPARTMENT**

Dave Froehlich, Governor



Craig Arthur, Interim Director

"Conserving Wildlife - Serving People"

December 2, 2003

WER 10220
Medicine Bow-Routt National Forest
and Thunder Basin National Grassland
Laramie Ranger District
Draft Environmental Impact Statement
Lost Cabin Mine Analysis

Melissa Martin, ID Team Leader
Laramie Ranger District
2468 Jackson Street
Laramie, WY 82070

Dear Ms. Martin:

The staff of the Wyoming Game and Fish Department has reviewed the Draft Environmental Impact Statement for the Lost Cabin Mine Analysis on the Laramie Ranger District. We offer the following comments.

Terrestrial Considerations:

The analysis area is primarily within spring/summer/fall habitat for the Sierra Madre elk and Platte Valley mule deer herds. Elk have been observed with calves in the area during July. The area also contains habitat for raptors, including goshawks, migratory birds, blue grouse, furbearers such as pine marten, and nongame mammals, including several bat species.

In regard to the Mowry Peak Inventoried Roadless Area (IRA), we previously requested the Medicine Bow-Routt National Forest (MBRNF) to describe how the proposal will retain habitat characteristics associated with remoteness from disturbance (including motorized activities) for wildlife.

- The Draft EIS does not quantify to what extent the type, frequency, intensity and duration of disturbance to wildlife will increase under the action alternatives. The MBRNF did address hiding and thermal cover for elk.
- The Draft EIS does not indicate how motorized public use of newly opened and reconstructed roads would be effectively limited, if there will be effective closures during

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Melissa Martin
December 2, 2003
Page 2 – WER 10220

non-mining periods, and how the roads will be effectively obliterated at the end of the project.

Our earlier comments suggested the need for wildlife inventories, including surveys for raptor nests, cavity nests, bat roosts, and pine marten dens, in order to identify where species could be negatively affected by road and mining activities. It appears these surveys were not conducted. We also asked MBRNF to identify management actions that would be implemented to reduce or eliminate habitat loss, vehicle traffic disturbance, and mining disturbance to wildlife. Will mine personnel be prohibited from carrying firearms while on permitted sites and while conducting exploration activities? Also, will additional timing stipulations and other protections be imposed to protect nesting raptors, such as goshawks, and other species of concern from increased road traffic and mining disturbance?

Any new roads should be constructed to the lowest standard possible to limit habitat alteration or loss. Habitat at this elevation is at or above treeline and is very susceptible to disturbance. Newly constructed roads should be reclaimed as soon as practical and with local native vegetation. Closed/reclaimed roads should be gated to prevent future re-establishment and use. Disturbance to subalpine and alpine vegetation may require substantial rehabilitation efforts beyond what is described in the Draft EIS, and bond forfeiture may not be adequate to assure this reclamation. We have numerous unanswered questions about this proposal that we hope can be coordinated with the Department and addressed in the Final EIS and Decision; many of those questions are identified below.

Issues:

P. 8. How does the project affect proposed alternative management area emphases under the revised Forest Plan and will the project significantly alter the characteristics of the Mowry Peak IRA?

P. 10. We believe illegal ATV use will increase with the proposed action since there will be higher traffic to the area, a greater awareness of activities behind the gates, and difficulty in keeping ATVs from bypassing barriers to reach improved roads and trails

Alternative 1:

P. 11-12. Mining personnel should be required to store food and trash in bear-proof containers at the trailer site to avoid providing human food rewards and to reduce potential for nuisance problems.

We are concerned with the frequency, duration and loudness of crusher operations. Given the quantity of samples to be taken, is it feasible to restrict crushing activities to certain predictable daytime periods to minimize wildlife disturbance?

P. 12. We are concerned about the adequacy of reclamation at exposed, high elevation sites. Has any successful reclamation taken place to date at the site and what is the probability of success with future reclamation?

Melissa Martin
December 2, 2003
Page 3 – WER 10220

It does not appear that roads are factored into the estimated acreage to be disturbed.

If personnel will only be working the site for 8 to 10 days/month, is it possible to consolidate work periods to narrow the time window of activity and disturbance (e.g., starting later (>July 1), work more days at a time (say, 25), and be done earlier (<Sept. 15) to allow wildlife more time to settle before the main hunting seasons? Conversely, would a more intensive field season allow the project to be completed in less than 5 years?

Alternative 2:

P. 12. Of the 2 action alternatives, Alternative 2 is better from a wildlife and habitat perspective because it minimizes physical disturbance due to roads and exploration activities, better avoids calving and other sensitive periods for wildlife, and because of relocating the crusher and trailer site to minimize disturbance. A number of our concerns and suggestions under Alternative 1 could also be incorporated (e.g., trash/food storage, consolidating work periods to expand the disturbance-free period). Requiring activity to stop on October 15 is better than the proposed action. However, allowing activity up through the archery and rifle deer seasons will have already caused some displacement that may affect hunting recreation opportunities.

Alternative 3:

P. 12. The Draft EIS should validate that the desired exploration cannot be achieved without the use of motorized equipment or with smaller motorized equipment.

Mitigation Measures Common to All Action Alternatives:

P. 15. Revegetation and other reclamation measures should be specified here. Gates should be locked and opportunities to bypass gates should be eliminated.

Monitoring Requirements for All Action Alternatives:

P. 15-16. We believe the wildlife inventories mentioned previously should be completed and any nests or other important habitat features for species of special concern should be monitored.

We are concerned that Forest Service law enforcement personnel are already spread too thin to monitor and enforce unauthorized motorized uses.

Existing Condition and Environmental Consequences:

P. 20-21. The Draft EIS indicates there is less hunting pressure in the analysis area than some other areas of the Forest. The document should state this is due in part to the roadless area and terrain within the analysis area.

A more detailed map showing the historical, existing and proposed mining-related activities would help with the interpretation of the Draft EIS.

Melissa Martin
December 2, 2003
Page 4 – WER 10220

Lands, Minerals and Non-recreation Special Uses:

P. 21. The Draft EIS indicates that the Lost Cabin Mine is within the Mowry Peak IRA that is classified under the Forest Plan for semi-primitive motorized recreation. What are the alternative management emphases for the Forest Plan Revision?

P. 22. The cumulative effects analysis should be more complete, given existing and historical mining interests, and the potential for increased mining following approval of this exploration Plan of Operations.

Infrastructure:

P. 23. Roads 440, 443, 447 and 447.1A are not identified on the maps.

P. 26. The Draft EIS recognizes existing soil erosion from OHVs and sediment deposition from roads and trails into South Heather Creek. To what extent will the project affect these problems?

Wildlife:

P. 39. How does the vertical diversity of the analysis area compare to adjacent watersheds, given the Draft EIS identifies the area as having more natural landscapes?

P. 40. Old growth is marginally meeting Forest Plan requirements. Considering measurement and other errors, it is likely that the area is below standards for providing good old growth habitat, particularly when constraints like proximity to roads and other activities are considered in a spatial analysis.

P. 41. Table 4 indicates that elk habitat capability is already below the Forest Plan requirement. Road density contributes to the low score. How will increased disturbance through project implementation be mitigated to maintain elk capability?

P. 42. The Draft EIS indicates goshawk nests were found north of the project area. We have documented nests to the south and east historically which may be closer to the project than those found. Will there be any conditions to the project in the event searches find nests that may be impacted?

How does hiding cover in the vicinity of the project compare to the analysis area as a whole? Will big game be secure or displaced by the project? Would the project likely impact thermal cover (which is already below Plan standards), given the elevation and proximity to ridgelines?

We previously raised concerns about bats and the potential for roosting in existing mineshafts and other features. To our knowledge, no surveys were conducted to this point. Bats are not addressed in any detail in the text of the Draft EIS, only in an appendix.

P. 43. Within the margin of error for assessing security cover, can it be concluded that cover requirements are being met and will not be reduced by the project?

Melissa Martin
December 2, 2003
Page 5 – WER 10220

Environmental Consequences - Alternative 1:

P. 44. The 30 acres of grass/forb converted to excavation seems to contrast with the statement on page 12 about 0.2 acres.

A table like that on p. 44 should also be presented for Alternative 1.

Environmental Consequences - Alternative 2:

P. 45. It seems intuitive that less road reconstruction and smaller equipment would reduce elk capacity, but they are the same in Table 6. This seems to contrast with the statements regarding road density.

Cumulative Effects:

P. 46. The cumulative effects discussion ignores some other ongoing activities, especially in the Cow Creek drainage, like cabin sites, state land forestry practices and other activities

P. 49. The impacts due to mining excavation are not the only ones related to the proposed action. The Draft EIS should include acreages for all project-associated activities.

It does not appear that the displacement of elk from roads is incorporated into the impacts analysis. It is only mentioned by reference to the Forest Plan FEIS.

P. 51. We again raise concern that the cumulative effects analysis only considers USFS-related actions and not those of private in-holdings and other uses.

Bibliography:

P. 58. We note the inclusion of the Smith and Long (1987) reference in the bibliography but we did not find it in the text. This may have been eliminated from an earlier version or scoping document and the citation was not removed. We have often indicated to the MBRNF that this reference has little credibility among elk managers.

Appendices:

We thank MBRNF for including the specialists' biological evaluations in the Draft EIS. We have requested this material in the past. Perhaps more results from these documents should be discussed in the text of the Draft EIS.

In summary, of the alternatives analyzed, we concur from the terrestrial wildlife perspective with the Forest's preferred alternative (Alternative 2). As we have suggested, there may be ways to further reduce the impacts of the project on wildlife by additional measures and scheduling of exploration activities under Alternative 2.

Aquatic Considerations:

The Department does not have any fishery related concerns with this project as long as Best Management Practices specifically related to sediment control are made part of the Plan of

Melissa Martin
December 2, 2003
Page 6 - WER 10220

Operations. Therefore, we support Alternative 2 from the aquatics standpoint. Alternative 2 would reduce the amount of disturbance, as compared to Alternative 1.

We would like to make a comment on the statement made on page 26 in Biotic Existing Conditions (Fisheries). The last sentence on that page reads "These trout are considered management indicators, but are not cause for viability concern given their widespread distribution across the Forest and Region." While we recognize that native trout are not an issue in the North Platte River basin, non-native trout populations and their viability are extremely important since they have become self-sustaining. The North Platte River and associated tributary streams are primarily managed as a Wild Fishery and depend on conditions that support natural reproduction. The North Platte River is an extremely important fishery regardless of whether the trout are native or not.

Thank you for the opportunity to comment.

Sincerely,



BILL WICHERS
DEPUTY DIRECTOR

BW:TC:as

cc: Kyndra Miller-Governor's Planning Office
USFWS