1988


United States Department of the Interior Bureau of Land Management

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PROPOSED
RESOURCE MANAGEMENT PLAN
AND
FINAL ENVIRONMENTAL IMPACT
STATEMENT
for the
CODY RESOURCE AREA
Worland District, Wyoming

Type of Action: Administrative
Jurisdiction: Portions of Big Horn and Park counties, Wyoming
Abstract: This document addresses alternatives for managing almost 1.1 million acres of federal land and about 1.5 million acres of federal mineral estate administered by the Cody Resource Area, Worland District, Bureau of Land Management (see map 1). The plan focuses on three resource management issues relating to vegetative resources, special management area designations, and resource accessibility and manageability.

This proposed RMP/final EIS incorporates by reference most of the material presented in the Draft Resource Management Plan Environmental Impact Statement for the Cody Resource Area. Four alternatives that address each issue were considered in detail in the draft RMP/EIS: continuation of present management (Alternative A) and three other alternatives that provide a variety of choices ranging from restricting management actions or development to actively mitigating the effects of resource management actions or development. The proposed action presented in this document is a refinement of Alternative D, the preferred alternative in the draft document. The changes from the draft RMP/EIS are described herein, as are the environmental consequences of the proposed plan. Comments on the draft document that were received from the public are reproduced in this document, along with responses from the Bureau of Land Management.

When the final version of the resource management plan is approved, the plan will provide a comprehensive framework for managing and allocating resources on the public land in the Cody Resource Area. Further information regarding this document can be obtained from the address below.

Thomas E. Enright, Area Manager
Bureau of Land Management
Cody Resource Area
P.O. Box 518
Cody, Wyoming 82414
Telephone: (307) 587-2216
Dear Reader:

Enclosed for your review and future reference is the Proposed Resource Management Plan - Final Environmental Impact Statement for the Cody Resource Area. It presents the proposed resource management plan (RMP), which is a refinement of the preferred alternative presented in the draft RMP/EIS for the Cody Resource Area, which was released in April 1988. In addition, it fulfills the requirements for preparation of a final environmental impact statement (EIS).

The environmental consequences of the proposed plan are discussed in this document, as are changes from the draft RMP/EIS. Comments received from the public and the Bureau of Land Management's responses to those comments are also included.

The draft Cody RMP/EIS is an integral part of the planning process. It will be required as a reference to accompany this final document. Copies of the draft are available from either the Cody Resource Area BLM, P.O. Box 518, Cody, WY 82414, or the Worland District BLM, P.O. Box 119, Worland, WY 82401.

All parts of the proposed RMP may be protested. Protests should be sent within 30 days after publication of a notice in the Federal Register that the Environmental Protection Agency has received the proposed RMP/final EIS.

Protests related to any part of the document should be sent to the Director (760), Bureau of Land Management, 1800 C Street NW, Washington, D.C. 20240. They should include (a) the name, mailing address, telephone number, and interest of the person filing the protest; (b) a statement of the issue or issues being protested; (c) a statement of the part or parts of the plan being protested; (d) a copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the record; (e) a concise statement explaining why the proposed management plan is believed to be wrong.

The proposed management plan will become final upon approval of a record of decision following the 30-day protest period. If any significant change is made to the proposed RMP as a result of a protest, the changed portion will be made available for public review and comment before final approval and implementation of the plan.

I want to personally thank those who have contributed to and participated in the development of this plan. I hope your involvement will continue as we move forward to implement and monitor the plan and manage the public lands and resources in the Cody Resource Area.

Sincerely,

[Signature]

Hillary A. Oden
State Director
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### ABBREVIATIONS

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<table>
<thead>
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<th>Abbreviation</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>ACEC</td>
<td>Area of critical environmental concern</td>
</tr>
<tr>
<td>AP</td>
<td>Application for Permit to Drill</td>
</tr>
<tr>
<td>APHIS</td>
<td>Animal and Plant Health Inspection Service, USDA</td>
</tr>
<tr>
<td>AMP</td>
<td>Allotment management plan</td>
</tr>
<tr>
<td>AUM</td>
<td>Animal unit month</td>
</tr>
<tr>
<td>BLM</td>
<td>Bureau of Land Management, U.S. Department of the Interior</td>
</tr>
<tr>
<td>BMP</td>
<td>Best management practices</td>
</tr>
<tr>
<td>BOR</td>
<td>Bureau of Reclamation, U.S. Department of the Interior</td>
</tr>
<tr>
<td>BP</td>
<td>Before present</td>
</tr>
<tr>
<td>C</td>
<td>Allotment</td>
</tr>
<tr>
<td>CEO</td>
<td>Council on Environmental Quality</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>C&amp;MU Act</td>
<td>Classification and Multiple Use Act of 1964</td>
</tr>
<tr>
<td>CRMP</td>
<td>Cultural resources management plan</td>
</tr>
<tr>
<td>DEQ</td>
<td>Department of Environmental Quality, Wyoming</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental assessment</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental impact statement</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>ERMA</td>
<td>Extensive recreation management area</td>
</tr>
<tr>
<td>FLPMA</td>
<td>Federal Land Policy and Management Act of 1976</td>
</tr>
<tr>
<td>FMP</td>
<td>Forest management plan</td>
</tr>
<tr>
<td>FS</td>
<td>Forest Service, U.S. Department of Agriculture</td>
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<tr>
<td>GS</td>
<td>Geological Survey, U.S. Department of Agriculture</td>
</tr>
<tr>
<td>HMP</td>
<td>Habitat Management Plan</td>
</tr>
<tr>
<td>&quot;I&quot; allotment</td>
<td>See appendix G</td>
</tr>
<tr>
<td>&quot;M&quot; allotment</td>
<td>See appendix G</td>
</tr>
<tr>
<td>MBF</td>
<td>Thousand board feet</td>
</tr>
<tr>
<td>MCF</td>
<td>Thousand cubic feet</td>
</tr>
<tr>
<td>MFP</td>
<td>Management framework plan</td>
</tr>
<tr>
<td>mg/l</td>
<td>Milligrams per liter</td>
</tr>
<tr>
<td>MLRA</td>
<td>Major land resource area</td>
</tr>
<tr>
<td>MMBF</td>
<td>Million board feet</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of understanding</td>
</tr>
<tr>
<td>NERA</td>
<td>National Environmental Policy Act of 1969</td>
</tr>
<tr>
<td>NDPES</td>
<td>National Pollution Discharge Elimination System</td>
</tr>
<tr>
<td>NPS</td>
<td>National Park Service, U.S. Department of the Interior</td>
</tr>
<tr>
<td>NWSRS</td>
<td>National Wild and Scenic River System</td>
</tr>
<tr>
<td>NRA</td>
<td>National Recreation Area</td>
</tr>
</tbody>
</table>

Abbreviations:
- NSO: "No surface occupancy" provision
- ORV: Off-road vehicle
- PSIAC: Pacific Southwest Inter-Agency Committee
- R&P: Recreation and public purposes
- RAMP: Recreation area management plan
- RMP: Resource management plan
- RNA: Research natural area
- RVD: Recreation visitor day
- SCS: Soil Conservation Service, U.S. Department of Agriculture
- SDR: Sediment delivery ratio
- SRMA: Special recreation management area
- TSP: Total suspended particulates
- USDA: United States Department of Agriculture
- USDI: United States Department of the Interior
- VRM: Visual resource management
- WGFD: Wyoming Game and Fish Department
- WSA: Wilderness study area
INTRODUCTION

This proposed resource management plan Environmental Impact Statement (RMP-EIS) for the Cody Resource Area was released in April 1988. The public was invited to comment on the draft through notices in local news media, and letters to those on the mailing list. A public meeting was held in May and small group meetings were also held.

A total of 101 written comments were received on the draft EIS. These comments and the BLM's responses are included in chapter 5 of this document.

CONTENT OF THIS DOCUMENT

This document is not a complete reprinting of the draft RMP-EIS, rather it focuses on the proposed plan which is a refinement of the preferred alternative (Alternative D) in the draft RMP-EIS. The environmental consequences of the proposed RMP are discussed as are changes from the draft RMP-EIS. Public comments on the draft are included, along with the BLM's responses to those comments.

The draft RMP-EIS will be required as a reference to accompany the proposed RMP final EIS. The arrangement of reprinted or updated portions of the RMP final EIS parallels the format of the draft RMP-EIS.

All maps necessary to understanding of the proposed plan are included in this document. Some are new, some have been revised from maps used in the draft document, and some are reproduced unchanged.

SUMMARY OF CHANGES IN THE PROPOSED PLAN

The proposed RMP is essentially the preferred alternative from the draft RMP-EIS for the Cody Resource Area. A few modifications have been made to respond to public comments, to incorporate new information, or to make factual corrections. The most notable changes are summarized below.

1. No surface occupancy restriction for oil and gas exploration and development would be applied to about 4,070 acres of BLM-administered land in the Yellowstone Wildlife Habitat Management Unit area.

2. Appendix J has been added to discuss the criteria for relevance and significance for designation of areas of critical environmental concern (ACECs) that were considered in the draft RMP-EIS. Two new ACEC proposals also are discussed.

3. The boundary of the Sheep Mountain proposed ACEC has been amended to remove lands with potential for the occurrence of bentonite. All of the proposed ACEC would be closed to the future location of mining claims.
Summary

Closures to operation of the general mining laws would remain in effect on additional lands classified under the Classification and Multiple Use Act of 1964 (C&MU). Mineral closures would continue on about 3,560 acres in the Little Mountain proposed ACEC. These closures would protect significant caves (about 283 acres) and an area along Porcupine Creek (about 3,277 acres) which may be eligible for inclusion in the National Wild and Scenic Rivers System.

Appendix K, Oil and Gas Operations, has been added to explain the possible sequence of oil and gas exploration and development activities and to describe the standard procedures governing geophysical exploration and oil and gas leasing, exploration, development, and abandonment.

Limitations on geophysical exploration have been modified to allow casual use on lands subject to ‘no surface occupancy’ restrictions.

A new special recreation management area (SRMA) has been added. The Rivers SRMA would include the Clarks Fork of the Yellowstone River, the North Fork and South Fork of the Shoshone River, and other fishing areas such as Newton Lakes.

Porcupine Creek in Devil Canyon has been determined eligible for further study and potential classification as a scenic river.
INTRODUCTION


This document is not a complete rewrite of the draft version. It contains information on changes in proposals of the draft, corrections of any erroneous material, and in some cases more recent data. The environmental consequences of the proposed plan are described in chapter 4.

Any additional works cited in this final document are listed in the Additional References section herein. A Glossary Supplement also is included. However, readers may wish to refer to the Glossary and References in the draft document. All maps necessary to an understanding of the proposed plan are included in this document. Some are new, some have been revised from maps used in the draft document, and some are reproduced unchanged.

PURPOSE AND NEED

When the final version of the RMP is approved, the plan will provide a comprehensive framework for management of the public land in the Cody Resource Area by the Bureau of Land Management (BLM). In addition, this document fulfills requirements for preparation of a final environmental impact statement (EIS).

As required by the Federal Land Policy and Management Act of 1976 (FLPMA) and the National Environmental Policy Act (NEPA), a range of alternatives was considered in the draft document. The proposed plan presented here is a refinement of the preferred alternative described in that document.

After completion, the Cody RMP will be kept current through maintenance, amendments, or revisions, as demands on public lands and resources change, as the land and resource conditions change, or as new information is acquired.

ADDITIONS AND CORRECTIONS

Changes to chapter 1 of the draft RMP/EIS are shown in the following list.
INTRODUCTION

The proposed RMP for the Cody Resource Area is described in this chapter. The proposed plan is essentially Alternative D, the preferred alternative, from the draft RMP/EIS document. A few modifications were made to respond to public comments, to incorporate new information, and to make factual corrections. The most notable changes are summarized in the next section following that the entire proposed plan is described.

CHANGES TO THE PREFERRED ALTERNATIVE

Restrictions on Surface-Disturbing Activities

A "no surface occupancy" restriction for leasable minerals exploration and development would be applied to about 4,070 acres of BLM-administered lands in the Yellowtail Wildlife Habitat Management Unit. Other surface-disturbing activities generally would be prohibited in the unit. The area would be closed to future locatable minerals exploration and development, subject to valid existing rights.

Areas of Critical Environmental Concern

Appendix J has been added to this document. In that appendix, the criteria for relevance and significance for designation of an area of critical environmental concern (ACEC) are described, and the five proposed ACECs considered in the draft RMP/EIS are discussed. Two additional ACEC proposals also are discussed.

The boundary of the Sheep Mountain proposed ACEC has been amended to remove lands with potential for the occurrence of bentonite. BLM-administered lands in the proposed ACEC now total about 12,285 acres. The proposed locatable mineral closure would be expanded to include all lands in the new proposed ACEC, including lands with the potential for occurrence of gypsum.

Lands and Realty Management

Additional lands have been identified as potentially suitable for disposal under section 203 of FLPLMA. Those lands are listed in the supplement to appendix E.

Closures to operation of the general mining laws would remain in effect on additional land classified under the Classification Multiple Use (CMU) act. Mineral closures would continue on about 3,560 acres in the Little Mountain proposed ACEC. These closures would protect significant caves (about 283 acres) and an area along Porcupine Creek (about 3,277 acres) that may be eligible for inclusion in the National Wild and Scenic Rivers System.

Minerals Management

Appendix K, Oil and Gas Operations, has been added to explain the possible sequence of oil and gas exploration and development activities and to describe the standard procedures governing geophysical exploration and oil and gas leasing, exploration, development, and abandonment.

Limitations on geophysical exploration have been modified to allow casual use on lands subject to "no surface occupancy" restrictions. Geophysical exploration would not be subject to ORV limitations. Instead, mitigation of potential effects from geophysical exploration would be covered by the Wyoming BLM standard mitigation guidelines for surface-disturbing activities (see appendix B).

Recreation

A new Special Recreation Management Area (SRMA) has been added. The Rivers SRMA would include the Clarks Fork of the Yellowstone River, the North Fork and the South Fork of the Shoshone River, and other fishing areas such as Newton Lakes.

Wild and Scenic Rivers

A new section has been added to reflect consideration of nine streams for inclusion in the National Wild and Scenic Rivers System. Porcupine Creek in Devil Canyon was determined eligible for further study and potential classification as a scenic river.

THE PROPOSED PLAN

Restrictions on Surface-Disturbing Activities

This section describes the restrictions that generally would be applied to surface-disturbing activities as conditions of land use. Later in the document, land use restrictions are described that would be applied in each ACEC.

Restrictions are described before other management actions are described because management actions in the proposed plan would operate within the constraints of these restrictions. This first section on land use restrictions is organized in order of the resources being protected by the restrictions. Most of the restrictions were developed from the "Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities," as described in appendix B.

Activities that would be affected by these restrictions are leasable and salable minerals exploration and development, geophysical exploration (except casual use), and construction activities such as rights-of-way development. The BLM authorizes these types of activities and places lease or permit stipulations on them. In contrast, the BLM has limited management authority over mining claim operations conducted under the General Mining Law of 1872. Such operations are managed under the surface management regulations in 43 CFR 3809. Although the restrictions described in the following pages are not generally applied to mining claim activities, they can be used as a result of negotiations between claim operators, the BLM, and the Wyoming Department of Environmental Quality (DEQ).

Restrictions to Protect Important Resources

Caves

A "no surface occupancy" restriction on leasable minerals exploration and development would be applied on about 690 acres above Natural Trap, Horsestieh, and Spirit Mountain caves. These areas generally would be closed to other surface-disturbing activities such as geophysical exploration (except casual use), salable minerals exploration and development, and right-of-way construction. Other important existing and newly discovered caves or cave passages would be protected in the same manner.

Cultural and Paleontological Resources

Avoidance areas for surface-disturbing activities would be designated in the immediately vicinities of significant paleontological and cultural resources. Avoidance areas also would be designated in the area within 1/2 mile of the visual horizon of significant segments of historic trails and canals, whichever is closer. These provisions cover the Bridger Trail, the Nez Perce Trail, the Fort Washakie to Red Lodge stage route, and the Wiley and Sidon canals. This might result in the application of additional restrictions to such things as exploration for and development of leasable minerals, geophysical exploration, and construction activities in those areas.

Riparian Areas and Surface Water

Surface-disturbing activities would be prohibited within 500 feet of surface water and/or riparian areas except when such activities were necessary and when impacts could be mitigated or avoided. This restriction generally would apply to leasable and salable minerals exploration and development, geophysical exploration (except casual use), and construction activities.

Scenic Values

Surface-disturbing activities would be prohibited in Class II visual resource management
Alternatives: Proposed Plan

(VMR) areas except when visual impacts could be mitigated or avoided.

Soil and Watershed Values
Timber cutting would be allowed on slopes up to 45%. For the protection of fragile soils, other surface-disturbing activities would not be allowed on slopes of more than 25%.

Special Management Areas
A "no surface occupancy" restriction would be applied on fishing and hunting access areas (about 3,460 acres). Five Springs Falls Campground (about 3,000 acres) for recreation and Public Purposes (R&P) leases for the Buffalo Bill Shooting Complex and the Lovell Rod and Gun Club shooting range (about 400 acres). This restriction would apply to leasable minerals exploration and development, geophysical exploration (except casual use), recreation, and construction activities, including development of range projects.

During periods of severe winter weather (average of about two years out of ten) approval of the BLM would be required before snow could be removed to gain access to the gas exploration and operation of BLM authorized projects or activities in big game winter ranges. The purpose would be to minimize unnecessary disturbance during periods when wildlife are under stress.

Black-Footed Ferrets
To protect black-footed ferret habitat, surface-disturbing activities would be prohibited on about 1,300 acres in the black-footed ferret essential habitat area. This restriction would be applied to such things as leasing and development, geophysical exploration (except casual use), and construction activities.

Ferrets and Other Species
High value recovery habitat areas outside the black-footed ferret essential habitat area, surface-disturbing activities would be prohibited to protect recovery habitat for black-footed ferrets, swift fox, burrowing owls, and other sensitive species. High value recovery habitat areas would be identified through ground surveys before BLM could apply the restriction. (Recovery habitats would include certain types of public land that generally occupy less than 40 acres each.)

In moderate and low value recovery habitat areas outside the black-footed ferret essential habitat area, surface-disturbing activities would be prohibited until searches could be conducted for black-footed ferrets, swift fox, burrowing owls, and other sensitive species. If these animals were located, the lessee or permittee would be required to modify activities to protect the animal and its habitat.

Grouse
Surface-disturbing activities would be prohibited on about 9,500 acres within 1/4 mile of sage grouse and sharp-tailed grouse strutting grounds (leks). This restriction would apply to activities such as leasable and salable minerals exploration and development, geophysical exploration (except casual use), and construction activities.

Seasonal restrictions would be applied to surface-disturbing activities and land use on about 292,000 acres in grouse habitat areas within a 2-mile radius of lek centers. These restrictions would apply to leasable and salable minerals exploration and development, geophysical exploration (except casual use), recreation, and construction activities, including development of range projects.

Raptors
During the nesting period, a seasonal restriction would prohibit surface-disturbing activities within 1/4 mile of raptor nests or the visual horizon of the nest. Whichever is closer (about 40,260 acres). This generally would apply to such things as leasable and salable minerals exploration and development, geophysical exploration (except casual use), and construction activities, including development of range projects and treatments.

Road construction and improvement would be avoided whenever possible within 1/4 mile of raptor sites or the visual horizon of the nest, whichever is closer. The purpose would be to limit increased vehicle use and related disturbances that could occur during the nesting period because of improved vehicle access.

Surface-disturbing activities would be prohibited if they would result in the loss of a specific active raptor nest or a structure on which a nest is located, or if they would cause loss of significant portions of concentration, foraging, or nesting habitat for raptors.

Management Actions by Resource Program

Air Quality
The objective for management of air quality is to attain air quality standards or better. No specific management actions are associated with this program in the proposed plan. Such things as prescription of fire, as use of prescribed fire, would be conducted so as to avoid violation of the Wyoming and National ambient air quality standards.

Cultural Resource Management
The objective for management of cultural resources is to expand the protection, study, and interpretation of cultural and paleontological resources.

The BLM would complete emergency site stabilization and long-term protection projects on known or newly discovered prehistoric sites, including the Hansell prehistoric occupation site and several rock art sites.

Cultural resource activity plans would be prepared for the Hunsaker prehistoric occupation site, several rock art occurrences, historic trails, including the Bridger Trail, the Nat Perce Trail, the Fort Washakie to Red Lodge stage route, and other important sites such as the Wiley and Sidot canals.
Alternatives: Proposed Plan

Fire Management

The objectives for fire management are (a) to use prescribed fire and hazardous materials and waste management practices to protect public health and safety from hazardous waste contamination, and (b) to suppress wildfires for the protection of resource values, property, and human life.

Prescribed fire would be used to accomplish management objectives described in resource activity plans, including HMPs, allotment management plans (AMPs), and the Rattlesnake Mountain Forest Management Plan.

Under the proposed plan, full suppression of wildfires would be practiced in portions of the planning area west of Crumby Highway 120 and in an area east of the Bighorn River. (This totals about 240,000 acres.) The remaining 841,000 acres of the planning area would be designated a limited suppression area (see map 2).

Some methods of wildfire suppression would be practiced in simplified and minimalist management areas. For example, the use of heavy equipment would be restricted in areas of fragile soils, in wetland-riparian areas, on lands above significant caves, on Sheep Mountain west of Cody, on Carter Mountain, and in timbered areas on the east end of Rattlesnake Mountain.

Forestland Management

The objective for forestland management is to meet timber harvest objectives and improve forest and wildlife conditions.

Approximately 1,500 cords of fuelwood—750 thousand board feet (MBF) per year—would be harvested.

About 300 acres would be planted and seeded with conifer species to regenerate areas previously burned by wildfire and wildfire. Other harvested areas would be planted with conifer species if these areas did not regenerate naturally within 15 years of the harvest.

The BLM would allow precommercial thinning in overstocked and regenerated timber sale areas where trees in those areas reached the 20- to 30-year age class. An average of 30 acres per year would be thinned.

The Rattlesnake Mountain Forest Management Plan would be revised for better integration of forest and wildlife management practices.

About 1 miles of roads would be built annually to meet planned harvest needs. Possible road closures would be assessed individually. Generally, spur roads would be closed after completion of timber harvests.

Forestlands on Rattlesnake Mountain would be classified as a restricted management area where wildlife, water, and recreation resource values would be emphasized. Partial cutting, extended forest road rotations, or other restrictions on forest management would be applied.

The BLM would seek to acquire administrative access along Trail Creek to Rattlesnake Mountain.

A maximum of 500 MBF of timber would be harvested from about 70 acres annually. Silvicultural treatments would be designed to favor spruce and fir regeneration. Over the life of the 29, 32, and 33, T, 56 N., R, 94 W., sections 4 and 5, T, 55 N., R, 94 W., and in other areas that contain recoverable species, the BLM would identify and manage these areas.

All forestlands outside the Rattlesnake Mountain area would be managed to enhance or maintain other resources or resource uses such as recreation opportunities, livestock grazing, wildlife, watershed, and scenic values. Some of these forestland areas are on the west slope of the Bighorn Mountains, on Carter Mountain, and on Little Mountain.

Geothermal Resources

The objective for management of geothermal resources is to maintain opportunities for geothermal exploration and development.

Geothermal resources would be available for leasing in areas open to oil and gas leasing. All other areas would be closed to geothermal leasing. Exploration for and development of geothermal resources would be subject to restrictions on surface-disturbing activities in the same manner that these restrictions are applied to oil and gas activities (see appendix B and K and the "Restrictions" section of this proposed plan).

Anticipated Levels of Activity: No geothermal leasing or development interest has been identified in the planning area. It is anticipated that development will not occur within the next ten years.

Hazardous Materials and Waste

The objective for management of hazardous materials and waste is to protect public health and safety from hazardous waste contamination.

Hazardous Materials

For activities on public lands that use hazardous materials, the BLM would monitor precautionary measures and contingency plans to guard against releases or spills into the environment.

Hazardous Wastes

Public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations.

Other Hazards

If hazards should be identified, the BLM would provide warnings as appropriate and establish precautions regarding safety hazards associated with the use of any areas on public land.

Lands and Realty Management

The objectives for lands and realty management are to manage the public lands to support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.

Access

The BLM would seek to acquire administrative access along Trail Creek to Rattlesnake Mountain.

Acquisition of public access to the Little Mountain and Cedar Mountain areas would have priority.

Public access opportunities in the Carter Mountain area would be maintained.

The BLM would retain recreational access to public lands along the North and South forks of the Shoshone River, to tracts covered by the Bighorn River HMP/RAMP, and to public lands along the Clarks Fork of the Yellowstone River.

Landownership Adjustments

About 55,900 acres would be available for consideration for disposal under the public land sale authority of FLPMA (section 203), subject to site-specific disposal criteria (appendix E of the draft RMP/EIS). Priority would be given to disposal of lands to meet community needs (see section on forest value and management for other lands that may have potential for future disposal).

Whether or not the areas are included in the 55,900 acres mentioned above, the BLM would consider any proposals for disposal of BLM-administered public lands in the planning area. Lands considered for disposal under section 203 of FLPMA also may be considered for disposal by other means, including desert land patent, exchange, and R&P patent. The preferred method of disposal would be through exchange.

Through land exchanges, the BLM would try to acquire private lands and add private lands to the BLM. These exchanges would be reported, secured, and cleaned up according to applicable federal and state regulations.

The Franklinloyd exchange proposal would be pursued to obtain about 180 acres that would complement wildlife habitat management in the Bighorn River HMP/RAMP area.

Other lands would be considered for acquisition individually. (Appendix E of the draft RMP/EIS contains information on lands for potential acquisition.)

Anticipated Levels of Activity: An average of about 2,000 acres per year would be disposed of over a period of 10 to 20 years through desert land patents, mineral patents, and R&P patents and public sale. About 500 acres per year would be disposed of through exchanges, and an equal acreage would be acquired through these exchanges.

Utility/Transportation Systems

When rights-of-way would be required in avoiding areas or when the area could not reasonably be avoided, the effects of right-of-way construction would be intensively mitigated.

Areas that would be designated as utility and pipeline corridors and communication site windows are shown on map 6. These areas would include existing right-of-way concentration areas and three communication sites. Designated corridors and windows would be the preferred locations for placement of future communication sites and utility pipeline rights-of-way. Transportation corridors would not be designated.

To protect scenic quality, placement of above-ground facilities such as power lines would be avoided along major transportation routes to the extent possible.
Alternatives: Proposed Plan

A right-of-way avoidance area for construction of aboveground power lines would be designated within 2 miles of the Bighorn River and within 1 mile of the Shoshone and Green River and the Clark's Fork of the Yellowstone. The avoidance area would be designed to reduce mortality of raptors, waterfowl, and other water birds from electrocution and collisions (see revised map 10).

The Bighorn River HMP/RAMP area would be designated a right-of-way avoidance area to protect wildlife, scenic, and recreational values.

The black-footed ferret essential habitat area would be designated a right-of-way avoidance area for roads and aboveground power lines. The purpose of this designation would be to minimize surface disturbance in the essential habitat area and to reduce the number of raptor perch sites from which raptors could prey upon ferrets.

Lands within 2% miles of bald eagle nests and within 1 mile of other raptor nests would be designated right-of-way avoidance areas for road construction.

Peregrine falcon recovery habitat areas would be designated avoidance areas for the placement of new roads and aboveground power lines.

Significant segments of historic trails would be avoided for the placement of all types of rights-of-way. Where feasible, rights-of-way would be placed across trail routes in existing right-of-way crossing areas.

Anticipated Levels of Activity: It is anticipated that during the next ten years about 650 to 700 acres will be disturbed by pipeline rights-of-way, 550 to 600 acres by power line construction, 3,000 acres by oil and gas exploration, and 300 acres by other types of right-of-way construction. More detailed information concerning foreseeable right-of-way development is on file in the management situation analysis, which is available at the Cody Resource Area Office.

Livestock Grazing Management

The objective for livestock grazing management is to improve the use and management of livestock in the public livestock use, wildlife, and watershed areas. Short-term livestock grazing use would vary from about 71,741 to 90,895 AUMS of forage use annually. Short-term reductions in livestock use would be implemented on 47 allotments to reduce conflicts with wildlife. To protect about 1,800 acres of wetland/riparian areas, other livestock use would be managed by the development of specific water sources or by the elimination of grazing. Long-term livestock grazing use would vary from about 73,070 to 75,354 AUMS annually (see appendix G of this document). The actual level of livestock grazing use would be based on monitoring and/or negotiation with grazing permittees.

Spring grazing would be modified on about seven "T" category allotments through the use of spring deferment grazing. Spring grazing on the other "I" category allotments would be modified, as appropriate, on the basis of results of monitoring.

Grazing season of use would remain the same on "M" and "C" category allotments.

Prairie dog town expansion would be controlled only in two allotments on about 225 acres.

Livestock grazing would not be allowed in Bighorn River HMP/RAMP tracts (about 2,500 acres).

High intensity monitoring would be conducted on top priority "I" allotments and on AMP areas and allotments of the McCullough Peaks wild horse herd management area. Low intensity monitoring would be conducted on other "I" allotments and on "M" and "C" category allotments.

AMPs would be developed for all allotments in the planning area. The intensity of the management plans would depend on allotment condition and resource conflicts.

Range projects, land treatments, and grazing systems would be developed to increase forage availability, control erosion and weeds, and to enhance wildlife, water, and wetland/riparian area values (see appendix G of this document).

Structural projects would be constructed in about 30 allotments; land treatments would be carried out on about 29 allotments; and grazing systems would be implemented in about 14 allotments.

 Portions of allotments that are outside with-drawn stock driveways and are affected by trailing would be monitored to determine whether the allotment could accommodate trailing without unacceptable effects on resources. The BLM would reserve the right to modify routes of historic use, to mitigate any impacts associated with trailing, or to deny trailing use if the impacts could not be adequately mitigated. Any trailing of the BLM would modify trailing use as appropriate, stock driveway withdrawals generally would be retained.

Minerals Management

The objective for management of the minerals program is to maintain or enhance opportunities for mineral exploration and development.

Leasable Minerals—Coal

The coal screening process has not been conducted. Intersite in exploration or leasing would be handled case by case. If an application for a coal lease should be received sometime in the future, an appropriate land use and environmental analysis, including the coal screening process, would be conducted to determine whether or not the coal areas applied for are acceptable for development and for leasing consideration. The RMP would be amended as necessary.

Anticipated Levels of Activity: To date, no interest has been expressed in these lands. Only casual development in the planning area is anticipated.

Leasable Minerals—Geophysical Exploration

The planning area would be open to geophysical exploration except for lands identified as closed to oil and gas exploration and lands with "no surface occupancy" restrictions for oil and gas. In the latter, planned geophysical exploration would be allowed. Geophysical exploration on open lands would be subject to restrictions on surface disturbing activities. These restrictions would apply to all geophysical exploration activities, whether done on lands already under an oil and gas lease or on land not under lease (see "Restrictions" section of this document and appendixes B and K).

Anticipated Levels of Activity: It is estimated that geophysical exploration would occur on about 300 miles of seismic lines per year. More detailed information concerning foreseeable levels of geophysical exploration is on file in the management situation analysis, which is available at the Cody Resource Area Office.

Leasable Minerals—Oil and Gas

Oil and gas reclamation plans would be developed concerning the development of exploration and development in the planning area and to allow for orderly development of new fields.

Table 3 shows the percentage of federal mineral estate in the planning area having high, moderate, and low potential for hydrocarbon occurrence on which oil and gas activities would be restricted.

Map 19 shows oil and gas fields and areas with high, moderate, and low potential for hydrocarbon occurrence. Map 20, revised map 25, and map 29 show areas in which oil and gas activities would be restricted.

Anticipated Levels of Activity: It is estimated that 40 to 50 wildcat wells and 620 to 630 development wells would be drilled in the planning area during the next ten years.

Development wells would be drilled in or near existing oil and gas fields. Wildcat wells would lead to the discovery of a estimated total of six new fields, each of which probably would pro-
Right-of-Way Avoidance Areas

- Right-of-Way Avoidance Area
- Major Transportation Route on Public Land
- Historic Trail or Canal (significant segments will be designated for avoidance)

(Avoid future rights-of-way that could impair scenic values)

Revised Map 10
Right-of-Way Avoidance Areas
TABLE 3

RESTRICTIONS ON SURFACE DISTURBANCE IN AREAS WITH HIGH, MODERATE OR LOW HYDROCARBON POTENTIAL

<table>
<thead>
<tr>
<th>Type of Restriction</th>
<th>Area Affected in Each Category (percentage)</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>High Potential Areas—1,101,000 Acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No leasing</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>&quot;No surface occupancy&quot; restrictions1</td>
<td>3.6</td>
<td>0.9</td>
</tr>
<tr>
<td>No surface use or activity2</td>
<td>14.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Surface occupancy allowed for more than 6 months3</td>
<td>72.1</td>
<td>82.0</td>
</tr>
<tr>
<td>Seasonal restrictions—Open to 3 months</td>
<td>8.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Seasonal restrictions—Open less than 3 months</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Moderate Potential Areas—286,600 Acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No leasing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&quot;No surface occupancy&quot; restrictions</td>
<td>8.0</td>
<td>3.8</td>
</tr>
<tr>
<td>No surface use or activity2</td>
<td>11.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Surface occupancy allowed for more than 6 months3</td>
<td>82.2</td>
<td>84.4</td>
</tr>
<tr>
<td>Seasonal restrictions—Open to 3 months</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Seasonal restrictions—Open less than 3 months</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low Potential Areas—120,600 Acres</td>
<td></td>
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</tr>
<tr>
<td>No leasing</td>
<td>0</td>
<td>0</td>
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<tr>
<td>&quot;No surface occupancy&quot; restrictions</td>
<td>7.3</td>
<td>17.9</td>
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<tr>
<td>No surface use or activity2</td>
<td>21.0</td>
<td>21.0</td>
</tr>
<tr>
<td>Surface occupancy allowed for more than 6 months3</td>
<td>67.9</td>
<td>73.5</td>
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<tr>
<td>Seasonal restrictions—Open to 3 months</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Seasonal restrictions—Open less than 3 months</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Note: Oil and gas fields are shown in map 19, areas in which oil and gas activities are restricted are shown on maps 20 through map 29 of the draft RAMP-EIS.

1 Percentages of federal mineral estate in this category on which these restrictions would be applied.
2 Percentages in Alternative C reflect the maximum level of restriction that could be applied if "no surface occupancy" guidelines were invoked in all sage grouse and sharp-tailed grouse habitat areas and in the proposed Chapman Bench Area of Critical Environmental Concern.
3 Percentages in Alternative D reflect the maximum level of restriction that could be applied if "no surface occupancy" guidelines were invoked in the proposed Chapman Bench Area of Critical Environmental Concern.
4 See the "No Surface Occupancy Guideline" section of appendix B of the draft RAMP-EIS.
5 This restriction is similar to the "No Surface Occupancy Guideline" except that it is applied to protect wildlife resources. (See the "Wildlife Mitigation Guideline" section of appendix B of the draft RAMP-EIS.)
6 Includes lands with seasonal guidelines and lands subject to standard mitigation guidelines that limit activities on slopes and in scenic areas or protect riparian areas and historic trails. (See the "Surface Disturbance Mitigation Guidelines" section of appendix B of the draft RAMP-EIS.)

Locatable Minerals

Bighorn River HMP/RAMP tracts (about 2,500 acres) would be closed to locatable mineral entry to protect recreational values and wildlife habitat.

Plans of operations or notices of intent would be required for locatable mineral exploration and development (except casual use) consistent with regulations.

Anticipated Levels of Activity: About 400 acres of disturbance per year would be caused by bench-top mining, which would be primarily on the west flank of the Bighorn Mountains and the southern flank of the Pryor Mountains north of Cowley and Lovell.

About 5 acres per year would continue to be disturbed by gypsum mining, and less than 5 acres per year would be disturbed by uranium exploration and development.

Salable Minerals

Sales of mineral materials from existing sites would be allowed. Proposed sales from new sites would be evaluated individually.

Anticipated Levels of Activity: About 40 acres per year would be disturbed by mining for salable minerals.

Off-Road Vehicle Management

The objectives for off-road vehicle (ORV) management are to maintain or enhance opportunities for ORV use and to mitigate effects on resource values.

ORV use in the planning area would be limited to existing roads and trails except as described below and shown on map 13. (Acreages listed in this section are not additive because of overlap.)

ORV play areas would be established in suitable areas such as the bench-top mining near Lovell, Irma Flats/Diamond Basin near Cody, the Lovell Lakes motorcross area, and areas near Powell and Greybull. These areas would be designated either open to all uses or limited to specific types of ORV use, depending on management needs.

Blight impact zones comprising about 2,000 acres around the Buffalo Bill Shooting Complex and the Lovell Rod and Gun Club shooting range would be closed to ORV use.

ORV use would be limited to designated roads and trails on about 95,800 acres to protect visual resources in areas with Class II VRM ratings and fragile soils.

On about 12,780 acres of threatened or endangered species habitat, ORV use would be limited to designated roads and trails, or seasonal restrictions would be applied.

ORV use would be limited to designated roads and trails on about 1,000 acres to protect significant cultural resources.

ORV use would be limited to designated roads and trails on about 2,000 acres over cave passages.

ORV use would be limited to designated roads and trails in the Bighorn River and West Slope SRMAs (about 207.300 acres).

To enhance management of forest and wildlife habitat, ORV use would be limited to designated roads and trails on about 19,000 acres on Rattlesnake Mountain.

Recreation Management

The objective for recreation management is to enhance opportunities for primitive recreation while increasing visitor services in some areas to meet needs for more developed forms of recreation.

Cave management in the Worland Caves SRMA would continue under the Worland Cave Management Plan. Caves with significant resource values would be added to the Worland Caves SRMA (see map 14).

Recreational use of the Bighorn River for fishing, hunting, and float boating would be managed under the Bighorn River HMP/RAMP.

Four additional SRMAs would be designated: The West Slope SRMA (covering the west slope of the Bighorn Mountains) and the Bighorn River SRMA would total about 207.300 acres. About 5,000 acres would be designated an SRMA along the North and South Forks of the Shoshone River and on the Clarks Fork of the Yellowstone River.
Known Geologic Structures
High Potential for Hydrocarbons
Moderate Potential for Hydrocarbons
Low Potential for Hydrocarbons

Map 19
Hydrocarbon Potential and Oil and Gas Fields
McCullough Peaks WSA. No leasing in this area until Congress decides on wilderness suitability.
No Surface Occupancy
1. Known Caves
2. Game and Fish Access Areas
3. Shooting Club

No Surface Use or Activity
- Prairie Dog Colony
- Black-Footed Ferret Essential Habitat
- Bald Eagle Nesting Habitat
- Sage Grouse Lek
- Peregrine Falcon Recovery Habitat (applies to new oil and gas leases)

Five Springs Falls Proposed ACEC
Bighorn River HMP/RAMP
Yellowtail Wildlife Habitat Management Unit

Revised Map 25
Oil and Gas Fulltime Restrictions
Chapman Bench Proposed ACEC
Big Game Winter Range and Calving Area
Peregrine Falcon Recovery Habitat
(appplies to existing oil and gas leases)
Raptor Nesting Habitat or Sharp-tailed or Sage Grouse Habitat

In the Chapman Bench Proposed ACEC, some activities may be permanently restricted if the total surface disturbance exceeds 5% of that area.
Closed to ORV Use
ORV Use Limited to Designated Roads and Trails
ORV Play Area
ORV use in the remainder of the Cody Resource Area is limited to existing roads and trails.
See Table 2 for description of areas that would be developed under each alternative. (Interpretive sites mentioned in Table 2 are not shown on this map.)
The objectives of this SRMA would be to maintain the existing natural and scenic characteristics of the Clarks Fork of the Yellowstone River and to maintain access for public recreation on the Clarks Fork, North Fork, and South Fork Rivers. Another SRMA would comprise significant segments of historic trails (see revised map 15). Activity plans would be developed for all SRMAs.

All portions of the planning area not designated SRMAs would be designated an extensive recreation management area (ERM), and an activity plan would be developed for the ERMA.

The BLM would develop recreation sites at Rainbow Canyon, at Hogan Reservoir, and on designated streams.

An interpretive site would be developed for the McCullough Peaks wild horse herd area. Additionally, directional and interpretive signs would be installed to facilitate recreational use of the west slope of the Bighorn Mountains; Cedar Mountain, the Nez Perce historic trails; the Ford Washakie to Red Lodge stage route; the Shoshone, Greybull, and Bighorn rivers; and the Clarks Fork of the Yellowstone River.

**Visual Resource Management**

The objective for visual resource management is to maintain or improve scenic values and visual quality.

Visual resource values would be considered before land uses would be authorized. Visual resources would be managed in accordance with objectives for each visual resource class that have been assigned to the planning area. These VRM classes are shown on map 16. Adverse effects on visual resources would be mitigated through the use of Wyoming BLM standard mitigation guidelines (appendix B). The BLM's system of visual resource management is described in appendix H of the draft RMP/EIS.

**Watershed Management**

The objectives for watershed management are to stabilize and conserve soils, to increase vegetative production, and to maintain or improve watershed quality.

About 700 acres of spreader dikes and ten detention dams would be maintained. Other watershed projects would be maintained as necessary.

Water quality would be monitored in areas where noxious weeds were treated. Priority for monitoring would be assigned to municipal watersheds, fish hatchery supply watersheds, and domestic or agricultural use watersheds with major fish-bearing stream segments.

To reduce sediment loadings in streams and river segments, the BLM would implement "best management practices" that focus on the state of Wyoming's Bighorn Basin water quality plans (see appendix I of the draft RMP/EIS). These BMPs would be contained in various BLM activity plans and in BLM use authorizations, as appropriate. Priority stream segments for use of BMPs and development of watershed activity plans would follow:

**Priority 1.** Shoshone River from its confluence with the Wind River to Buffalo Bill Dam. Within the Shoshone subbasin, priority drainages would be Whistle, Deer, Coon, and Sand creeks, Rock Wash, and Foster Gulch.

**Priority 2.** Bighorn River from Bighorn Reservoir to Greybull. Within the Bighorn subbasin, priority drainages would be Flaming Gorge, Bear and Dry Bear creeks (see map 17).

The BLM might acquire oil and gas exploratory wells and geophysical drill holes that produce water. These wells would be developed for multiple use if they met the criteria listed in appendix I of the draft RMP/EIS for water well conversion.

To allow valid water rights, the BLM would file all water-related projects with the Wyoming State Engineer's office.

When karst areas were discovered that exhibit underground drainage characteristics similar to those in the Spanish Point Karst (map 16), McCullough Washakie Resource Area, they would be proposed for ACEC designation.

**Wild and Scenic Rivers**

Nine stream segments were studied to determine their potential for inclusion in the National Wild and Scenic Rivers System. New table 1 reflects the analysis and conclusion of this proposal (see new map 1).

**W要想ness Study Areas**

Recommendations for designation or nondesignation of WSAs as wilderness would be submitted to Congress, the Interior, and the President. (Management prescriptions for the 24,570-acre McCullough Peaks WSA and recommendations regarding wilderness designation or nondesignation are covered in the Grass Creek/Cody Wilderness EIS; therefore, they have not been repeated in this document.) Until Congress acts, the McCullough Peaks WSA would be managed under the BLM's interpretive management. Whatever decision Congress makes on this WSA will become part of the final Cody RMP, and if necessary the RMP will be amended.

**Wild Horse Management**

The objective for management of wild horses in the McCullough Peaks area is to maintain a viable herd of wild horses so that the free-ranging nature of the population would be maintained and opportunites would be available for the public to view wild horses.

The McCullough Peaks wild horse herd area would be managed so that an overall population of 100 horses would be maintained. All horses have been identified in the Foster Gulch herd management area as outlined in the wild horse herd management plan (USD) BLM 1985). Although the Foster Gulch area would not be managed for wild horses, its status as a wild horse area would be maintained (see map 1). Approximately 5 miles of fence would be built adjacent to private land on the northern boundary of the McCullough Peaks area to contain wild horses in the herd area.

**Wildlife and Fish Habitat**

The objective for management of wildlife and fish habitat is to maintain and enhance wildlife and fish habitats so that the forage production and quality of rangelands and fish and wildlife habitat would be maintained or improved.

The condition of uncommon and important wildlife habitats would be maintained or improved through vegetative manipulations, standard mitigation measures, and other management actions. Uncommon and important wildlife habitats include wetlands, mountain shublands, and Douglas-fir, Engelmann spruce-subalpine fir, and aspen-conifer forests.

The Peregine Falcon Recovery, West Slope, Bighorn, Greybull, and Cody Wetlands HMPS would be revised as necessary and implemented.

Pending the development of a site-specific management plan, public lands within the unit (active bald eagle nests (currently involving about 2,480 acres of public land) would be managed as essential habitat for bald eagle production and recovery.

The following areas would be incorporated into the Yellowstone Habitat Management Unit for bald eagle recovery. Tract 84 north of the Shoshone River, T 56N, R. 95W, sec. 4, lot 3; and lot 8. Management of these areas would be consistent with that of other lands in the Yellowstone habitat management unit.

Sagebrush control would be allowed in sensitive wildlife habitat areas subject to the use of restrictions to protect wildlife and wildlife habitat.

Sagebrush control would be allowed within 500 feet of water unless site-specific environmental analyses indicated a need for the restriction.

Wildlands and fisheries habitat would be managed to enhance values through restrictions on surface-disturbing activities and implementation of management practices such as noxious weed control, removal of vegetation, and fences, reducing sedimentation, acquiring water rights, developing springs, and maintaining reservoirs.

So that existing prairie dog ecosystems could be maintained for the recovery of black-footed ferrets and burrowing owls and for better management of swift fox recovery, the use of poisons to control vertebrate animals would be avoided in the planning area. The use of poisons would be allowed only when no other control methods would be feasible or practical. Such use would be subject to established animal damage control procedures.

Chemical control of noxious weeds generally would be prohibited in areas designated as habitat for sensitive species. Exceptions would be made in cases where the biological control program was considered inadequate, or after consultation with county weed and pest control authorities regarding the need for treatment and methods of treatment.

For the protection of prey bases essential to the peregrine falcon and other birds, spraying of insecticides would not be allowed unless it was determined that economically important levels of insect infestation were present. Such spraying would be done only after the completion of site-specific environmental analyses. (More specific restrictions that would be applied locally in the Chapman Bench proposed ACEC are described under "Chapman Bench" in this proposed plan.)

The BLM would work cooperatively with the Wyoming Game and Fish Department (WGFD), the Forest Service (FS), and other agencies and organizations to determine feasible, successful, and safe methods of removing browsing big horn sheep on the West Slope of the Bighorn Mountains. If the reestablishment is feasible, the BLM would support this effort.

Alternatives: Proposed Plan

Alternatives: Proposed Plan

The following areas would be incorporated into the Yellowstone Habitat Management Unit for bald eagle recovery. Tract 84 north of the Shoshone River, T 56N, R. 95W, sec. 4, lot 3; and lot 8. Management of these areas would be consistent with that of other lands in the Yellowstone habitat management unit.

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## NEW TABLE 1

**WILD AND SCENIC RIVER DESIGNATION POTENTIAL**

<table>
<thead>
<tr>
<th>River or Stream</th>
<th>Free-Flowing Natural</th>
<th>Length</th>
<th>Outstanding Remarkable Values</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clark’s Fork of the Yellowstone</td>
<td>Free flowing with numerous irrigation diversions.</td>
<td>Approximately 10 miles from FS boundary to State Ditch. 6 miles public land, 0.5 mile state land, and 3.5 miles private land.</td>
<td>The first 40 acres of public land east of the FS boundary contains a National Historic Trail, outstanding scenic values, unique wildlife habitat, and significant recreation opportunities for fishing, hunting, floating, picnicking, and camping. The remaining segment is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>While 40 acres at the FS boundary may qualify as eligible, this segment has already been studied for inclusion in the National Wild and Scenic River System and was removed from further consideration (USDA, FS 1979). The remaining public lands downstream do not contain outstanding values that would warrant qualification.</td>
</tr>
<tr>
<td>South Fork of the Shoshone River</td>
<td>Free flowing with numerous irrigation diversions.</td>
<td>Approximately 24 miles from USGS gauging station at Boulder Creek to Buffalo Bill Reservoir. 2 miles public land, and 22 miles private land.</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The numerous diversions, lack of outstanding or remarkable values, and absence of manageable blocks of public land indicate disqualification.</td>
</tr>
<tr>
<td>North Fork of the Shoshone River</td>
<td>Free flowing.</td>
<td>Approximately 12 miles from FS boundary to Buffalo Bill Reservoir. 1 mile public land, and 11 miles private land.</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The lack of outstanding or remarkable values and absence of manageable blocks of public land indicate disqualification.</td>
</tr>
<tr>
<td>Shoshone River</td>
<td>Free flowing with numerous irrigation diversions and dams.</td>
<td>Approximately 66 miles from Buffalo Bill Dam to Bighorn Lake. 20 miles of public land, the longest section of public land is 7 miles.</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The numerous diversions, lack of outstanding or remarkable values, and absence of manageable blocks of public land indicate disqualification.</td>
</tr>
<tr>
<td>Meeteetse Creek</td>
<td>Free flowing with irrigation diversions.</td>
<td>Approximately 18 miles from FS boundary to the Greybull River. 1.5 miles public land, and 16.5 miles of private and state land.</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The lack of outstanding or remarkable values and absence of manageable blocks of public land indicate disqualification.</td>
</tr>
<tr>
<td>River or Stream</td>
<td>Free-Flowing Natural</td>
<td>Length</td>
<td>Outstanding Remarkable Values</td>
<td>Conclusions</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Greybull River</td>
<td>Free flowing with numerous irrigation diversions.</td>
<td>Approximately 77 miles from FS boundary to the Bighorn River, 4 miles of public land, and 73 miles of private</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The lack of outstanding or remarkable values and absence of manageable blocks of public land indicate disqualification</td>
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<tr>
<td>Dry Creek</td>
<td>Large contributions of water produced from oil and gas development. Free flowing in the early spring and during storms.</td>
<td>Approximately 68 miles from the produced water source to the Bighorn River, 52 miles public land, and 16 miles private</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The lack of free-flowing water and the lack of outstanding or remarkable values indicate disqualification</td>
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<tr>
<td>Bighorn River</td>
<td>Free flowing.</td>
<td>Approximately 25 miles from U.S. Highway 14 to USGS gauging station at the Bighorn National Recreation Area boundary; 13 miles of public land (longest section is 2 miles), and 12 miles of private land</td>
<td>The stream is not outstanding when compared to rivers having potential for designation, or already designated in the system.</td>
<td>The lack of outstanding or remarkable values and absence of manageable blocks of public land indicate disqualification</td>
</tr>
<tr>
<td>Porcupine Creek</td>
<td>No impoundments or other unnatural alterations of a significant nature to disqualify.</td>
<td>Approximately 27 miles from source to Bighorn Lake.</td>
<td>Porcupine Creek flows for almost its entire length through the highly scenic Devil Canyon. Fishing and other primitive recreation opportunities are excellent. There are numerous cultural resource sites along the canyon. Primitive “jeep” roads parallel the creek in the canyon for about 6 miles but have only minimal impact on natural character</td>
<td>The river qualifies as a potential scenic river. Further studies should be conducted with the FS. Existing mineral segregations on 3,277 acres should be retained pending completion of studies.</td>
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</tbody>
</table>

**NEW TABLE 1 (Continued)**

**WILD AND SCENIC RIVER DESIGNATION POTENTIAL**
Management Actions in Proposed ACEC

Carter Mountain Proposed ACEC

Designations and Objectives
An area of about 7,819 acres would be designated an ACEC (see maps 30 and 31).
The objective for management of the Carter Mountain proposed ACEC is to protect areas of unique alpine tundra and fragile soils.

Restrictions on Surface-Disturbing Activities
The Carter Mountain proposed ACEC would be open to exploration and development of leasable minerals. For the protection of fragile soils and alpine tundra, surface-disturbing activities would be prohibited on slopes of more than 7%. This would apply to exploration and development of leasable minerals and to geophysical exploration and right-of-way construction.

For the protection of crucial winter range for mule deer and bighorn sheep, seasonal restrictions would be applied to surface-disturbing activities and land uses such as exploration and development for leasable minerals, geophysical exploration (except casual use), recreation, and construction activities (including development of range projects).

Cultural Resource Management
Class III cultural resource inventories would be conducted before surface-disturbing activities could be allowed. Effects on cultural resources would be mitigated or avoided.

Fire Management
The proposed ACEC would be managed as a full suppression area for wildfire, although the use of heavy equipment would be restricted to protect fragile soils and alpine tundra. Prescribed fire would be used as appropriate to accomplish management objectives described in resource activity plans such as AMPs.

Hazardous Materials and Wastes
Hazardous Materials. For activities on public lands that use hazardous materials, the BLM would monitor precautionary measures and contingency plans to guard against releases or spills into the environment.

Hazardous Wastes. Public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations. Parties responsible for contamination would be liable for cleanup and resource damage costs as prescribed in federal and state regulations.

Other Hazards. If hazards are identified, the BLM would provide warnings as appropriate and establish precautions regarding safety hazards associated with the use of any areas on public land.

Lands and Realty
Access. Existing public access opportunities through the proposed ACEC would be maintained, but additional access would not be sought.

Landownership Adjustments. About 840 acres would be identified for possible acquisition to improve management through consolidation of landownership.

Utility/Transportation Systems. The Carter Mountain proposed ACEC would be designated an avoidance area for placement of future rights-of-way. When rights-of-way would be required or the proposed ACEC could not reasonably be avoided, the effects of right-of-way construction on soils, watershed, and alpine tundra would be intensively mitigated.

Livestock Grazing Management
Livestock grazing would continue on three allotments in the proposed ACEC.

Alternatives: Proposed Plan

Minerals Management
The proposed ACEC would be open to leasable mineral entry. A plan of operations would be required for all leasable mineral exploration and development (except casual use), including disturbances that would cover 5 acres or less.

Off-Road Vehicle Management
ORV use in the proposed ACEC would be restricted to designated roads and trails.

Recreation Management
Recreational sites would not be developed. A few interpretive signs would be installed.

Visual Resource Management
Visual resources would be managed in accordance with Class II VRM objectives (see appendix H of the draft RMP/EIS).

Wildlife and Fish Habitat Management
During periods of severe winter weather (average of about two years out of ten), approval of the BLM would be required before snow could be removed to gain access to leases and permits in big game winter ranges. The purpose would be to minimize unnecessary human disturbance during periods that wildlife are under stress.

Chapman Bench Proposed ACEC

Designation and Objective
About 15,400 acres of Chapman Bench would be designated an ACEC (see map 32).
The objective for management of the Chapman Bench proposed ACEC is to protect an important long-billed curlew and mountain plover nesting concentration area and adjacent habitat along Sand Coulee.

Restrictions on Surface-Disturbing Activities
The proposed ACEC would be open to exploration for and development of leasable minerals.

Surface-disturbing activities would be allowed from October 1 to April 15. However, no surface-disturbing activities would be allowed if unreclaimed disturbance would exceed 5% of the total surface of the proposed ACEC at any given time. These restrictions generally would be applied to such things as leasable minerals exploration and development, geophysical exploration (except casual use), and construction activities, including right-of-way development.

Cultural Resource Management
Class III cultural resource inventories would be conducted before surface-disturbing activities could be authorized. Effects on cultural resources would be mitigated or avoided.

Fire Management
The proposed ACEC would be a limited suppression area for wildfire. Prescribed fire would be used as appropriate to accomplish management objectives described in resource activity plans such as AMPs and AMPs.

Hazardous Materials and Wastes
Hazardous Materials. For activities on public lands that use hazardous materials, the BLM would monitor precautionary measures and contingency plans to guard against releases or spills into the environment.

Hazardous Wastes. Public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations. Parties responsible for contamination would be liable for cleanup and resource damage costs as prescribed in federal and state regulations.

Other Hazards. If hazards are identified, the BLM would provide warnings as appropriate and establish precautions regarding safety hazards associated with the use of any areas on public land.

Lands and Realty
Landownership Adjustments. No lands in the proposed ACEC would be identified for acquisition.

Utility/Transportation Systems. The proposed ACEC would be designated an avoidance area for placement of aboveground power lines and road rights-of-way. When rights-of-way would be required or the proposed ACEC could not reasonably be avoided, the effects of right-of-way construction would be intensively mitigated.
Proposed ACEC Boundary
BLM Managed Public Land
State Land
Private Land

Map 32
Chapman Bench Proposed ACEC

Map 31
Carter Mountain Proposed ACEC
Alternatives: Proposed Plan

Livestock Grazing Management

Livestock grazing management in the proposed ACEC would be consistent with ACEC objectives. Before the nesting season for long-billed curlews and mountain plovers, livestock grazing would be managed to reduce the height of vegetation. Livestock grazing would be prohibited during the nesting season. Habitat requirements for curlews and plovers would be incorporated into AMPs and other activity plans that would be developed for the area.

Minerals Management

The area would be closed to future locatable mineral exploration and development.

For existing mining claims, a plan of operations would be required for all mineral exploration and development (except casual use), including disturbances that would cover 5 acres or less.

Off-Road Vehicle Management

ORV use in the proposed ACEC would be restricted to designated roads and trails.

Visual Resource Management

Visual resources would be managed in accordance with Class II and III VPM objectives.

Wildlife and Fish Habitat Management

The BLM would attempt to establish suitable riparian foraging habitat on Chapman Bench along Little Sand Coulee or to develop other riparian habitat and water sources for wildlife.

The use of chemical treatments to control insects would be prohibited.

Five Springs Falls Proposed ACEC

Designation and Objective

An ACEC comprising about 160 acres would be designated in the Five Springs Falls area (see map 33). The objective for management of the Five Springs Falls proposed ACEC is to protect existing populations of four near-endemic rare and sensitive plant species in the Five Springs Falls area.

Restrictions on Surface-Disturbing Activities

The Five Springs Falls proposed ACEC would be open to exploration for and development of locatable minerals with a "no surface occupancy" restriction.

The 160-acre proposed ACEC would be closed to surface-disturbing activities such as geophysical exploration (except casual use), locatable minerals exploration and development, and construction activities (except those related to development of recreation or interpretation of rare plants).

Cultural Resource Management

Class III cultural resource inventories would be conducted before surface-disturbing activities could be authorized. Effects on cultural resources would be mitigated or avoided.

Fire Management

The Five Springs Falls proposed ACEC would be a full suppression area for wildfire. Prescribed fire would be used as appropriate to accomplish management objectives described in resource activity plans such as HMPs and AMPs.

Forest Management

Forest resources in the Five Springs Falls area would be managed to emphasize native plant, wildlife, watershed, and recreation values.

Hazardous Materials and Wastes

Hazardous Materials. For activities on public lands that use hazardous materials, the BLM would monitor precautionary measures and contingency plans to guard against releases or spills into the environment.

Hazardous Wastes. Public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations. Parties responsible for contamination would be liable for cleanup and resource damage costs as prescribed in federal and state regulations.

Other Hazards. If hazards should be identified, the BLM would provide warnings as appropriate.
Lands and Realty

Access. Existing access would be retained in the Five Springs Falls area. Additional access would not be acquired.

Utility/Transportation Systems. The proposed ACEC would be designated an avoidance area for placement of future rights-of-way. When rights-of-way would be required or the proposed ACEC could not reasonably be avoided, the effects of right-of-way construction would be intensively mitigated.

Livestock Grazing Management

Livestock grazing would continue to occur occasionally in the area, although grazing would be excluded from the Five Springs Falls Campground.

Minerals Management

The proposed ACEC would be closed to future locatable mineral exploration and development. For existing mining claims, a plan of operations would be required for all locatable mineral exploration and development (except casual use), including disturbances that would cover 5 acres or less.

Off-Road Vehicle Management

The proposed ACEC would be closed to ORV use.

Recreation Management

Recreational facilities at the Five Springs Falls Campground would be maintained. Interpretive signs would be used in the proposed ACEC to explain the importance of protecting rare plants and their habitat.

To protect rare plants, hiking would be limited to existing trails, and except for the purposes of approved monitoring and research, no climbing would be allowed on the cliffs that form Five Springs Falls.

Visual Resource Management

Visual resources in the ACEC would be managed in accordance with Class I VRM objectives.

Wildlife and Fish Habitat Management

Wildlife habitat management in the Five Springs Falls area would be consistent with objectives of the West Slope HMP. Protection of crucial winter range for mule deer would be emphasized.

Little Mountain Proposed ACEC

Designation and Objective

An ACEC comprising about 20,510 acres would be designated in the Little Mountain area (see map 34).

The objective for management of the Little Mountain proposed ACEC is to protect and manage important cave resources and important cultural and paleontological values.

Restrictions on Surface-Disturbing Activities

A "no surface occupancy" restriction for locatable minerals exploration and development would be applied to about 528 acres above Natural Trap and Horsestheft caves. Other important known caves or cave passages or any discovered in the future would be protected in the same manner.

Other surface-disturbing activities would be prohibited above Natural Trap and Horsestheft caves and on lands above any important cave passage discovered in the future. These prohibited activities generally would include such things as geophysical exploration (except casual use), salable minerals exploration and development, and construction of roads and reservoirs.

Cultural Resource Management

A cultural resource management plan (CRMP) would be developed to address management of significant cultural and paleontological resources in the proposed ACEC.

Class III cultural resource inventories would be conducted before surface-disturbing activities could be authorized and before use of prescribed fire. Effects on cultural resources would be mitigated or avoided.
Alternatives: Proposed Plan

Fire Management
The proposed ACEC would be identified as a full suppression area for wildfire, but heavy equipment would be prohibited over Horse Ledge, Natural Trap, and other important caves.

Hazardous Materials and Wastes
Hazardous Materials. For activities on public lands that use hazardous materials, the BLM would monitor precautionary measures and contingency plans to guard against releases or spills into the environment.

Hazardous Wastes. Public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations. Parties responsible for contamination would be liable for cleanup and resource damage costs as prescribed in federal and state regulations. The BLM would encourage and cooperate with the Wyoming DEQ to clean up and rehabilitate abandoned uranium mines in the proposed ACEC.

Other Hazards. The BLM would provide warnings as appropriate and establish precautions regarding safety hazards associated with the use of any areas on public land. For example, BLM would erect temporary fencing and signs at abandoned mines in the proposed ACEC warning of the public health hazards posed by radioactivity and uncovered mine entrances and adits.

Lands and Realty—Utility/Transportation Systems
The Little Mountain proposed ACEC would be designated an avoidance area for placement of future rights-of-way. When rights-of-way would be required or the proposed ACEC could not reasonably be avoided, the effects of right-of-way construction would be intensively mitigated.

Livestock Grazing Management
Livestock grazing would continue on three grazing allotments that are inside the proposed ACEC.

Minerals Management
About 528 acres over Horse Ledge and Natural Trap caves would remain closed to locatable mineral exploration and development. In addition, closures would be established for lands above other significant caves and above caves and cave passages that may be discovered in the future.

For both existing and future mining claims in the entire proposed ACEC, a plan of operations would be required for all locatable mineral exploration and development (except casual use), including disturbances that would cover 5 acres or less.

Off-Road Vehicle Management
ORV use in the proposed ACEC would be restricted to designated roads and trails.

Recreation Management
Facilities for cavers would be constructed near Horsethief cave. Visitor services and patrols would be increased and interpretive and directional signs would be posted.

The issuance of cave permits would be limited to ensure a "wild" experience for cave users.

Visual Resource Management
Visual resources would be managed in accordance with Class II and Class III VRM objectives according to the classifications shown on map 16.

Wildlife and Fish Habitat Management
Wildlife habitat management would be consistent with the objectives of the West Slope HMP. Protection of crucial winter range for mule deer would be emphasized.

Sheep Mountain Anticline Proposed ACEC
Designation and Objective
About 12,285 acres in the area of the Sheep Mountain Anticline would be designated an ACEC (see revised map 35).

The objective for management of the Sheep Mountain Anticline proposed ACEC is to protect an important natural area with unique geological features.

Restrictions on Surface-Disturbing Activities
All lands in the Sheep Mountain Anticline area would be open to exploration for and development of locatable minerals; however, a "no surface
Alternatives: Proposed Plan

occupancy’ restriction would be applied on Bighorn River HMP/RAMP tracts (about 2,500 acres) and above important caves and cave passages.

Bighorn River HMP/RAMP tracts in the proposed ACEC and lands above caves would be closed to other surface-disturbing activities such as geophysical exploration (except casual use), salable minerals exploration and development, and construction activities (except those related to development of recreation or wildlife habitat).

Elsewhere in the proposed ACEC, surface-disturbing activities generally would be allowed.

Cultural Resource Management
Class III cultural resource inventories would be conducted before surface-disturbing activities could be authorized. Effects on cultural resources would be mitigated or avoided.

Fire Management
The proposed ACEC would be identified as a limited suppression area for wildfire.

Prescribed fire would be used as appropriate to accomplish management objectives described in resource activity plans such as HMPs and AMPs.

Hazardous Materials and Wastes
Hazardous Materials. For activities on public lands that use hazardous materials, the BLM would monitor precautionary measures and contingency plans to guard against releases or spills into the environment.

Hazardous Wastes. Public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations. Parties responsible for contamination would be liable for cleanup and resource damage costs as prescribed in federal and state regulations.

Other Hazards, if hazards should be identified, the BLM would provide warnings as appropriate and establish precautions regarding safety hazards associated with the use of any areas on public land.

Lands and Realty
Landownership Adjustments. No lands in the Sheep Mountain Anticline area would be identified for acquisition.

Utility/Transportation Systems. The Bighorn River HMP/RAMP tracts in the Sheep Mountain Anticline proposed ACEC would be designated an avoidance area for placement of new rights-of-way. When rights-of-way would be required or the tracts could not reasonably be avoided, the effects of right-of-way construction would be intensively mitigated.

Livestock Grazing Management
Livestock grazing would continue on four allotments in the proposed ACEC.

Minerals Management
The Bighorn River HMP/RAMP tracts in the Sheep Mountain Anticline proposed ACEC would be closed to further locatable mineral entry

Lands within the proposed ACEC would be closed to locatable mineral exploration and development subject to valid existing rights.

A plan of operations would be required for locatable mineral exploration and development (except casual use), including disturbances that would cover 5 acres or less. (See revised map 36 showing mineral claims in the proposed ACEC.)

Off-Road Vehicle Management
ORV use in the Sheep Mountain Anticline proposed ACEC would be restricted to designated roads and trails.

Recreation Management
The Sheep Mountain Anticline proposed ACEC would be intensively managed for recreational and interpretive use. Sign, roads, and recreational facilities would be developed.

Visual Resource Management
Visual resources in the Sheep Mountain Anticline area would be managed in accordance with Class II VRM objectives.

Landownership Adjustments. No lands in the Sheep Mountain Anticline area would be identified for acquisition.

Utility/Transportation Systems. The Bighorn River HMP/RAMP tracts in the Sheep Mountain Anticline proposed ACEC would be designated an avoidance area for placement of new rights-of-way. When rights-of-way would be required or the tracts could not reasonably be avoided, the effects of right-of-way construction would be intensively mitigated.

Livestock Grazing Management
Livestock grazing would continue on four allotments in the proposed ACEC.

Minerals Management
The Bighorn River HMP/RAMP tracts in the Sheep Mountain Anticline proposed ACEC would be closed to further locatable mineral entry.

Lands within the proposed ACEC would be closed to locatable mineral exploration and development subject to valid existing rights.

A plan of operations would be required for locatable mineral exploration and development (except casual use), including disturbances that would cover 5 acres or less. (See revised map 36 showing mineral claims in the proposed ACEC.)

Off-Road Vehicle Management
ORV use in the Sheep Mountain Anticline proposed ACEC would be restricted to designated roads and trails.

Recreation Management
The Sheep Mountain Anticline proposed ACEC would be intensively managed for recreational and interpretive use. Sign, roads, and recreational facilities would be developed.

Visual Resource Management
Visual resources in the Sheep Mountain Anticline area would be managed in accordance with Class II VRM objectives.
### ADDITIONS AND CORRECTIONS FOR CHAPTER 2 (Continued)

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### Additions and Corrections for Chapter 2

#### Revised Maps

As a result of public comments and further review by BLM specialists, modifications have been made in some of the maps originally printed in chapter 2 of the draft RMP/EIS but not used as part of the proposed plan. In some cases, the modifications dictated the reprinting of the map. The map numbers have not been changed from those used in the draft RMP/EIS. The revised maps 7, 8, and 12 are reprinted on the following pages.

#### Other Additions and Corrections

Other changes to chapter 2 of the draft RMP/EIS are shown in the following list.

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<td>Lands and Realty Management should appear as a resource program heading</td>
</tr>
<tr>
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<td>1</td>
<td>4</td>
<td>1</td>
<td>Delete The Franklin Floyd exchange</td>
</tr>
<tr>
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<td>2</td>
<td>4</td>
<td>1</td>
<td>Same as Alternative A should be The Franklin Floyd exchange</td>
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Alternatives: Proposed Plan

ADDITIONS AND CORRECTIONS FOR CHAPTER 2 (Continued)

<table>
<thead>
<tr>
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<th>Line(s)</th>
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<td>Same as Alternative A</td>
</tr>
<tr>
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<td>4</td>
<td>Following</td>
<td>4</td>
<td>Same as Alternative A</td>
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<td>4</td>
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<td>Same as Alternative A</td>
</tr>
<tr>
<td>145 4</td>
<td>2 1</td>
<td>2 2</td>
<td>4</td>
<td>To protect grouse habitat</td>
</tr>
<tr>
<td>147 5</td>
<td>2 4</td>
<td></td>
<td></td>
<td>term and about 49,000 tons in</td>
</tr>
<tr>
<td>148 2</td>
<td>2 4</td>
<td>5 5</td>
<td>9 9</td>
<td>the planning area. About 65% of this erosion would be</td>
</tr>
<tr>
<td>148 3</td>
<td>2 4</td>
<td>3 2</td>
<td>9 9</td>
<td>about 52,600 tons (13%) per year</td>
</tr>
<tr>
<td>148 4</td>
<td>2 4</td>
<td>4 2</td>
<td>4</td>
<td>by about 60,610 tons (15%)</td>
</tr>
<tr>
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<td>2 4</td>
<td>5 2</td>
<td>4</td>
<td>by about 72,410 tons (18%) per year</td>
</tr>
<tr>
<td>149 4</td>
<td>2 4</td>
<td>5 2</td>
<td>9 9</td>
<td>by about 81,750 tons (20%) per year</td>
</tr>
<tr>
<td>149 5</td>
<td>2 4</td>
<td></td>
<td></td>
<td>by about 11,000 tons (3%) per year</td>
</tr>
<tr>
<td>149 4</td>
<td>2 4</td>
<td></td>
<td></td>
<td>by about 53,000 tons (13%)</td>
</tr>
<tr>
<td>149 5</td>
<td>2 4</td>
<td>2 2</td>
<td>4</td>
<td>Replace 4 with</td>
</tr>
<tr>
<td>149 2</td>
<td>4</td>
<td>Following</td>
<td>4</td>
<td>Black-footed ferret recovery habitat would be reduced</td>
</tr>
<tr>
<td>149 3</td>
<td>4</td>
<td>Following</td>
<td>4</td>
<td>by about 30 acre by bentonite exploration and development. Oil</td>
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<tr>
<td>149 4</td>
<td>4</td>
<td>Following</td>
<td>4</td>
<td>and gas exploration and development would not affect the habitat.</td>
</tr>
<tr>
<td>149 5</td>
<td>4</td>
<td>Following</td>
<td>4</td>
<td>About 2,500 acres of recovery</td>
</tr>
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<td>150 2</td>
<td>2</td>
<td></td>
<td>4 7</td>
<td>this could decrease bald eagle production</td>
</tr>
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<td>2</td>
<td>Replace 2 with</td>
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Alternatives: Proposed Plan

ADDITIONS AND CORRECTIONS FOR CHAPTER 2 (Continued)

<table>
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<tr>
<th>Draft Page</th>
<th>Column</th>
<th>Paragraph</th>
<th>Line(s)</th>
<th>Should Read</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 2</td>
<td>3</td>
<td>Following</td>
<td>3</td>
<td>Human disturbances from minerals exploration and</td>
</tr>
<tr>
<td>150 3</td>
<td>3</td>
<td>Following</td>
<td>3</td>
<td>development would eliminate raptor production</td>
</tr>
<tr>
<td>150 4</td>
<td>3</td>
<td>Following</td>
<td>3</td>
<td>at 12 to 23 nest sites at least temporarily during the</td>
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<tr>
<td>150 5</td>
<td>3</td>
<td>Following</td>
<td>3</td>
<td>period of development</td>
</tr>
<tr>
<td>150 6</td>
<td></td>
<td>1 6</td>
<td></td>
<td>Soil losses would continue at present levels because of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>also could cause unintentional damage of cultural resources</td>
</tr>
</tbody>
</table>
Right-of-Way Avoidance Area

Major Transportation Route on Public Land
(Avoid future rights-of-way that could impair scenic values)

Revised Map B
Right-of-Way Avoidance Areas
Alternative B
ADDITI0NS AND CORRECTIONS FOR CHAPTER 3

Page numbers refer to pages in the draft RMP EIS. A partial paragraph at the top of a column counts as paragraph 1. The changed or added material in the 'Should Read' column is in bold type.

<table>
<thead>
<tr>
<th>Draft Page</th>
<th>Column</th>
<th>Paragraph</th>
<th>Line(s)</th>
<th>Should Read</th>
</tr>
</thead>
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<tr>
<td>169</td>
<td>1</td>
<td>2</td>
<td>Last and first</td>
<td>wells had been drilled. This figure includes water wells</td>
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<tr>
<td>170</td>
<td>2</td>
<td>3</td>
<td>12</td>
<td>Uranium deposits in the Mississippian age</td>
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<tr>
<td>170</td>
<td>2</td>
<td>3</td>
<td>End paragraph with</td>
<td>Uranium has been found in other formations in the planning area but no production has occurred and none is expected in the next ten years.</td>
</tr>
<tr>
<td>177</td>
<td>2</td>
<td>5</td>
<td>8 to 10</td>
<td>Available recreational opportunities include repelling, ascending,</td>
</tr>
<tr>
<td>178</td>
<td>1</td>
<td>5</td>
<td>12</td>
<td>of approximately 80° F. This uniqueness ...</td>
</tr>
<tr>
<td>191</td>
<td>Table 12</td>
<td></td>
<td></td>
<td>Footnote 2 should read: SC5 condition classes were not determined on 78% of this acreage</td>
</tr>
<tr>
<td>198</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>Salinity may impair the use of water</td>
</tr>
<tr>
<td>198</td>
<td>2</td>
<td>4</td>
<td>23</td>
<td>planning area. Grazing by livestock and wildlife causes 73%</td>
</tr>
<tr>
<td>198</td>
<td>2</td>
<td>6</td>
<td>5 to 8</td>
<td>water use in some wells near Frannie is restricted because of dissolved radium in the Madison Limestone</td>
</tr>
<tr>
<td>202</td>
<td>Table 16</td>
<td></td>
<td></td>
<td>The revised version of this table is included in the pages following this list</td>
</tr>
<tr>
<td>207</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>available in April or May 1989</td>
</tr>
<tr>
<td>207</td>
<td>1</td>
<td>3</td>
<td>End paragraph with</td>
<td>Other wetlands are largely dependent on oil field water releases. Two that provide excellent waterfowl habitat are Arnoldus or Byron Lake and the Byron Swamps, near the Garland and Byron oil fields, respectively</td>
</tr>
<tr>
<td>207</td>
<td>2</td>
<td>5</td>
<td>3-4</td>
<td>streams. 26.8 miles in class 1, 10 miles in class 2, 48 miles in class 3, and</td>
</tr>
<tr>
<td>208</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>confirmed in the black footed ferret essential habitat area</td>
</tr>
<tr>
<td>209</td>
<td>1</td>
<td>7</td>
<td></td>
<td>River east of Lovell are the best potential breeding habitat in the planning area</td>
</tr>
</tbody>
</table>

Since the Affected Environment in the planning area is unchanged, the text of chapter 3 has not been repeated in this proposed RMP final EIS. A list of additions and corrections for the text of the draft follows.

The Yellowtail Wildlife Habitat Management Unit is one of the two most area rather than as a production area. Although There also appears to be a low level white-tailed deer population increase in the planning area, and their range appears to be expanding in the Heart Mountain area. The BLM’s present grazing fee is $1.54 per AUM. The average annual return to BLM from this fee is about $122,134.
Affected Environment

TABLE 16
USES AND CLASSIFICATIONS OF SELECTED STREAMS IN THE PLANNING AREA

<table>
<thead>
<tr>
<th>Stream or Impoundment</th>
<th>Uses*</th>
<th>DEQ Classification1</th>
<th>WGF Classification1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bighorn River Subbasin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bighorn River (Greybull to Kane)</td>
<td>I, W&amp;L, SBC, CFW</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Shell Creek (below forest boundary)</td>
<td>PWS, I, CFW, W&amp;L</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Bear Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Crystal Creek</td>
<td>W&amp;L, CFW</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Crooked Creek</td>
<td>W&amp;L, CFW, SA</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Pourquaiene Creek</td>
<td>SBC, W&amp;L, CFW, SA</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Trout Creek</td>
<td>SBC, W&amp;L, SA</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Greybull River and tributaries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest boundary to Wood River</td>
<td>I, W&amp;L, SBC, SA</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Wood River to Meeteetse Creek</td>
<td>I, W&amp;L, SBC, SA</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Meeteetse Creek to Bench and Canal diversion</td>
<td>I, W&amp;L, CFW, SBC</td>
<td>II</td>
<td>4</td>
</tr>
<tr>
<td>Canal diversion to mouth</td>
<td>I, W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Dry South Fork</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeteetse Creek</td>
<td>I, W&amp;L, CFW, SBC</td>
<td>II</td>
<td>4</td>
</tr>
<tr>
<td>Crystal Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Crooked Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Bear Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>South Fork to Farmers Creek</td>
<td>SBC, I, CFW, W&amp;L, SA</td>
<td>II</td>
<td>2</td>
</tr>
<tr>
<td>to Buffalo Bill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Fork, forest boundary to Buffalo Bill</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Buffalo Bill to Williowill Dam</td>
<td>I, CFW, SBC, SBC, W&amp;L</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Williowill Dam to Yellotail Subbasin</td>
<td>PWS, I, CFW, SBC, W&amp;L</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Sulfur Creek</td>
<td>I, W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Idaho Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Mantua Draw</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Bitter Creek</td>
<td>W&amp;L, I, CFW</td>
<td>II</td>
<td>3</td>
</tr>
<tr>
<td>Whistle Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Sage Creek (North)</td>
<td>I, W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Pocol Creek</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Loch Katrine</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Clark's Fork of Yellowstone Subbasin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver Spoon Gulch</td>
<td>W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Sunlight Creek</td>
<td>W&amp;L, CFW</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Big Sand Coulee</td>
<td>I, W&amp;L</td>
<td>IV</td>
<td>5</td>
</tr>
<tr>
<td>Impoundments in Big Sand Coulee</td>
<td>SBC, CFW, SBC, W&amp;L</td>
<td>II</td>
<td>3</td>
</tr>
</tbody>
</table>

1. CFW = cold water fishery; I = irrigation; PWS = industrial water; PBC = primary body contact; PWS public water supply; SA = stream aesthetics; SBC = secondary body contact; W&L = wildlife & livestock watering; WWF = warm water fishery
2. Class I—surface waters that are to be maintained at their existing quality and in which no further water quality degradation by point source discharges will be allowed. Class II—surface waters, other than those classified as class I, that the WQFD has determined to be supporting game fish at present or to have hydrologic and natural water quality potential to support game fish. Class III—surface waters, other than those classified as class I, that the WQFD has determined to be suitable for supporting non-game fish such as trout; or to have the hydrologic and natural water quality potential to support non-game fish. Class IV—surface waters, other than those classified as class I, that the WQFD has determined to have no hydrologic or natural water quality to support any fish. Class V—very low production waters—fisheries frequently of local importance but generally incapable of sustaining substantial fishing pressure. Class V—very low production waters—often incapable of sustaining a fishery.

INTRODUCTION

This chapter presents the environmental consequences of management actions of the proposed Cody RMP, which are described in chapter 2. General cause and effect environmental consequences that would apply to the proposed plan (and to all the draft RMP alternatives) can be found in the draft RMP/EIS in the section on environmental consequences of Alternative A. Chapter 4. With a few exceptions, these "common" environmental consequences are not repeated in this final RMP/EIS. In addition, we have minimized comparisons to the environmental consequences of other alternatives (A, B, and C) in the draft RMP. This has been done so that the description of the environmental consequences of the proposed plan can be understood without major cross-referencing. Comparisons to alternatives in the draft RMP are limited to Alternative A, which pertains to existing management and the present level of environmental consequences.

EFFECTS OF THE PROPOSED PLAN

Effects on Resources

Air Quality

Air quality would be affected by wildfire and fire control activities, timber harvest activities, mineral exploration and development, ORV use, and wildlife development. Pollutants caused by these activities would be either particulate or gaseous emissions. Particulate emissions in the form of fugitive dust would be caused by construction of roads, drill pads, and pipelines and by other construction activities. Wildfires and prescribed burning would release other particulates into the atmosphere. Suspended particulate concentrations from those activities would cause only temporary, acceptable effects on air quality.

Oil and gas production activities would release gaseous pollutants such as carbon monoxide, hydrocarbons, nitrogen oxides, sulfur oxides, and hydrogen sulfide. These air pollutants would be released by separation facilities, disposal liquid waste and unwanted gas, burning of waste petroleum products, routine emission of objectionable odors, and venting of noxious vapors from storage tanks. Emissions of these gases would remain within Wyoming air quality standards.

There would be no effects on air quality from management actions in any of the proposed ACECs under the proposed plan.

Cultural Resources

Full suppression of wildfire would be practiced on roughly one-fourth as much area as under Alternative A of the draft RMP/EIS. In other areas, limited suppression would be practiced or restrictions would be placed on the use of heavy equipment. This would reduce potential adverse effects on cultural resources by limiting the modification of the ground surface by heavy equipment.

No significant cultural resources are known to be on lands potentially suitable for public sale. Any significant cultural resources on these lands probably would be discovered in site-specific investigations that would be conducted during evaluation of sale proposals. In such cases, effects would be mitigated by appropriate wording in the permit, or the sale could be denied if necessary.

Termination of BOR withdrawals on about 202,000 acres would make possible such land uses as locatable mineral development or domestic land entry on lands where those activities formerly were prohibited. No significant cultural resources are known to be on lands where new surface-disturbing activities would be expected to occur.
Environmental Consequences

Because of the procedures for inventory and protection of cultural resources, no adverse effects on cultural resources should be anticipated from surface-disturbing activities except those related to exploration for and development of locations. Strategies for protecting cultural resources from the effects of locatable minerals activities are limited. Restrictions on resource use are less restrictive than restrictions on other surface-disturbing activities.

When locatable mineral development would disturb less than 5 acres and a plan of operations is not required, the time allowed for cultural resource inventories is minimal. For disturbances of 5 acres or more, a plan of operations is required and more time is allowed for cultural resource inventories. If a plan of operations is developed and time is allowed for cultural resource inventories, it should be managed so as to avoid construction of structures on cultural resources.

The 2,700 acres of forestland that is not in the timber production base would be left for natural succession to occur. This would mean that by the time the forestland would be in an overmature, decaying condition at any given time. Eventually, disturbances in the forest would cause overmature stands to revert to earlier successional stages. As these stands reverted to earlier successional stages, timber could be harvested into older age classes to take their place. This would ensure that enough overmature timber would be available to meet various resource objectives.

The productivity of the 5,700 acres of the timber production base to be managed on a 120-year rotation period would increase by 80 to 100% because of intensive management practices such as thinning. Stands that now produce 8 to 10 MBF of these stands over the rotation period of 120 years. The 1,000 acres of the timber production base that would be managed on a 150-year rotation period would be primarily Douglas-fir and spruce-fir stands. The practice of holding this timber for a longer period would mean that 8 to 10 MBF less could be harvested if the stand was harvested at the end of 120 years.

A seasonal restriction to protect peregrine falcon recovery areas would affect about 1,500 acres of the Rattlesnake Mountain Forest Management Plan area, including about 500 acres of forestland. These restrictions would prohibit most activities but not use or development of access for forest management activities on the 500 acres of affected forestland. This sale of fuelwood is expected that the seasonal restriction would have no effects on forest management activities.

There would be no effects on forest resources from management actions in any of the proposed ACECs.

Geology and Minerals

Effects from Lands Actions

The possible sale of public lands under section 203 of the PMA could allow, with a mining development. On lands that are prospectively valueable for oil and gas and other minerals, the extent of exploration for valuable resources is limited. In most cases the mineral estate would be retained in public ownership. This could affect the cost of mineral development to some extent by creating "spill estate" lands. Potential mineral developers would then need to negotiate with the new surface owners as well as with the BLM, and the development and exploration costs would be increased. These adverse effects would be greatest on lands in existing oil and gas units, where it would be possible that exploration wells would intersect previously undrilled areas containing unknown mineral values would be disposed of. If the mineral estate was sold, the government would lose revenue; if the surface was sold, causing "spill estate" lands, the cost of mineral development probably would increase.

The removal of segregations on BOR-withdrawn and C&SMU classified lands would make more lands available for locating exploration or development activity. Bentonite mining would occur on previously undisturbed areas with high value bentonite deposits in areas north of Cowley. This would have an economically beneficial effect on the economy of the area and may cause high quality deposits are large and the pre-processing plants in Lowell are nearby, development costs would be expected to be reduced. Therefore, development costs would be reduced even after they became available.

Effects From Wildlife Actions

No significant impact would occur from restrictions prohibiting surface-disturbing activities on about 2,480 acres of public land within 2 miles of one active bald eagle nest. Most of the public lands tracts included in the 2,480 acres are small and could be explored by directional drilling.

Directional drilling might be required because of restrictions prohibiting surface-disturbing activities on approximately 1,300 acres in the black-footed ferret essential habitat area. This could increase the cost of development in the area.

The ferret habitat is in an area of high potential for hydrocarbons. The objective of minimizing surface disturbances in grouse habitat areas would have a limited effect on oil and gas exploration and development development. A seasonal restriction to protect fragile soils. The use of existing roads and trails that cross fragile soils generally would allow exploration and development activities to continue. However, in many areas the only way a potential reservoir could be reached would be by directional drilling.

The recovery of oil and gas by directional drilling is more costly and difficult, and one with a 1-mile departure probably would not be attempted because of the cost and the level of difficulty.

Environmental Consequences

Because of the procedures for inventory and protection of cultural resources, no adverse effects on cultural resources should be anticipated from surface-disturbing activities except those related to exploration for and development of locations. Strategies for protecting cultural resources from the effects of locatable minerals activities are limited. Restrictions on resource use are less restrictive than restrictions on other surface-disturbing activities.

When locatable mineral development would disturb less than 5 acres and a plan of operations is not required, the time allowed for cultural resource inventories is minimal. For disturbances of 5 acres or more, a plan of operations is required and more time is allowed for cultural resource inventories. If a plan of operations is developed and time is allowed for cultural resource inventories, it should be managed so as to avoid construction of structures on cultural resources.

The 2,700 acres of forestland that is not in the timber production base would be left for natural succession to occur. This would mean that by the time the forestland would be in an overmature, decaying condition at any given time. Eventually, disturbances in the forest would cause overmature stands to revert to earlier successional stages. As these stands reverted to earlier successional stages, timber could be harvested into older age classes to take their place. This would ensure that enough overmature timber would be available to meet various resource objectives.

The productivity of the 5,700 acres of the timber production base to be managed on a 120-year rotation period would increase by 80 to 100% because of intensive management practices such as thinning. Stands that now produce 8 to 10 MBF per acre would produce 15 to 20 MBF during the next rotation period. A million board feet (MBF) would be available for harvest from these stands over the rotation period of 120 years. The 1,000 acres of the timber production base that would be managed on a 150-year rotation period would be primarily Douglas-fir and spruce-fir stands. The practice of holding this timber for a longer period would mean that 8 to 10 MBF less could be harvested if the stand was harvested at the end of 120 years.

A seasonal restriction to protect peregrine falcon recovery areas would affect about 1,500 acres of the Rattlesnake Mountain Forest Management Plan area, including about 500 acres of forestland. These restrictions would prohibit most activities but not use or development of access for forest management activities on the 500 acres of affected forestland. This sale of fuelwood is expected that the seasonal restriction would have no effects on forest management activities.

There would be no effects on forest resources from management actions in any of the proposed ACECs.

Geology and Minerals

Effects from Lands Actions

The possible sale of public lands under section 203 of the PMA could allow, with a mining development. On lands that are prospectively valueable for oil and gas and other minerals, the extent of exploration for valuable resources is limited. In most cases the mineral estate would be retained in public ownership. This could affect the cost of mineral development to some extent by creating "spill estate" lands. Potential mineral developers would then need to negotiate with the new surface owners as well as with the BLM, and the development and exploration costs would be increased. These adverse effects would be greatest on lands in existing oil and gas units, where it would be possible that exploration wells would intersect previously undrilled areas containing unknown mineral values would be disposed of. If the mineral estate was sold, the government would lose revenue; if the surface was sold, causing "spill estate" lands, the cost of mineral development probably would increase.

The removal of segregations on BOR-withdrawn and C&SMU classified lands would make more lands available for locating exploration or development activity. Bentonite mining would occur on previously undisturbed areas with high value bentonite deposits in areas north of Cowley. This would have an economically beneficial effect on the economy of the area and may cause high quality deposits are large and the pre-processing plants in Lowell are nearby, development costs would be expected to be reduced. Therefore, development costs would be reduced even after they became available.

Effects From Wildlife Actions

No significant impact would occur from restrictions prohibiting surface-disturbing activities on about 2,480 acres of public land within 2 miles of one active bald eagle nest. Most of the public lands tracts included in the 2,480 acres are small and could be explored by directional drilling.

Directional drilling might be required because of restrictions prohibiting surface-disturbing activities on approximately 1,300 acres in the black-footed ferret essential habitat area. This could increase the cost of development in the area.

The ferret habitat is in an area of high potential for hydrocarbons. The objective of minimizing surface disturbances in grouse habitat areas would have a limited effect on oil and gas exploration and development development. A seasonal restriction to protect fragile soils. The use of existing roads and trails that cross fragile soils generally would allow exploration and development activities to continue. However, in many areas the only way a potential reservoir could be reached would be by directional drilling.

The recovery of oil and gas by directional drilling is more costly and difficult, and one with a 1-mile departure probably would not be attempted because of the cost and the level of difficulty.
In addition to the departure, other factors that determine the increase in costs due to directional drilling are the depth of the hole, the subsurface geology, and the method of drilling. Rented drill rig and equipment would be needed for a longer time in directional drilling; therefore, rental costs would be higher. The cost of drilling mud, labor, and equipment also would be higher in directional drilling, and more dirt work would be needed to accommodate additional equipment.

As a rough estimate, a 10,000-foot well with a 1/4-mile departure could cost 10% more than the same well with no departure; one with a 1/2-mile departure could cost 50% more; and one with a 1-mile departure, 100% more.

Although no drilling has occurred in the proposed ACEC so far, interest in exploration in the Carter Mountain area is high.

There would be no adverse effects on oil and gas exploration and development under the proposed plan from management actions in the Five Springs Falls, Little Mountain, and Sheep Mountain Anticline proposed ACECs.

Overlapping seasonal restrictions to protect wildlife in the Chapman Bench proposed ACEC would limit drilling time from a minimum of about four months to a maximum of about six months per year, depending on location. Oil in this area is most likely to occur in the Frontier Formation, which is about 15,000 feet below the surface. Drilling to reach this depth would take two or more years to complete because of the seasonal restrictions; the added cost of drilling could make exploration uneconomical. However, on the basis of projections of future activity, it appears unlikely that the area would be drilled for deep gas within the next ten years. Shallower reservoirs could be developed within "open" periods allowed by seasonal limitations, and because of this, adverse effects on oil and gas development would not be expected in the Chapman Bench proposed ACEC.

Although additional locatable mineral closures would be made in all of the proposed ACECs, no effects would be expected on locatable mineral exploration and development. In the two proposed ACECs that have large numbers of existing claims (Little Mountain and Sheep Mountain Anticline), most areas of mineralization are already covered by mining claims. A new mineral closure would not have any effect on the valid existing rights for mineral exploration and development that would be associated with these claims.

Environmental Consequences

Livestock Grazing

Proposed range projects and intensive management systems in 49 "I" allotments eventually would improve overall range condition and restore 3,613 AUMS in the long term. This would reflect a level within 97% of the existing grazing use (as described in Alternative A of the draft RMP/EIS). The suggested practices would be spring deferment of grazing, rest-rotation grazing systems, vegetation manipulations, and structural projects to improve livestock distribution. Improved forage production and condition would benefit both livestock and wildlife.

Spring livestock grazing would be subject to rest systems or deferment on seven allotments to restore overall vigor of desirable cool season grasses. These measures might cause operators to seek private pastures or to use supplemental feed during specific seasons. The need to move livestock and to maintain facilities could mean additional work for the operators affected.

Livestock trailing would be monitored in allotments along historical livestock trailing routes so that appropriate use levels could be determined. Livestock trailing would be adjusted if it was in conflict with other grazing use within affected allotments. These adjustments could require some operators to move livestock by truck or obtain permission to move livestock over private lands, which generally would increase costs for affected operators. After monitoring and consultation with permittees, withdrawals for livestock driveways no longer required for trailing would be revoked. In addition, the BLM would modify routes of historical use to mitigate impacts associated with livestock trailing.

Recreation

Designation of five SRMAs, improved access, and promotion of recreation opportunities would bring about an increase of 164,220 recreation visitor days (RVDs) above existing use. The changes in annual recreation use are displayed in revised table 42.

ORV designations provided by the proposed plan would change the pattern of use. Designation of ORV play areas and increased directional signing would increase use from 4,500 to 5,400 RVDs. ORV use in 85% of the planning area would be limited to existing roads and trails. Access could be restricted in the remainder of the plan-
## REVISED TABLE 42

### CHANGES IN ANNUAL RECREATION USE UNDER PROPOSED PLAN

<table>
<thead>
<tr>
<th>Activity</th>
<th>West Slope Special Recreation Management Area</th>
<th>Bighorn River Special Recreation Management Area</th>
<th>Cave Special Recreation Management Area&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Historic Trails Special Recreation Management Area</th>
<th>Rivers Special Recreation Management Area&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Cody Extensive Special Recreation Management Area&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Total Recreation Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RVDs</td>
<td>% Change</td>
<td>RVDs</td>
<td>% Change</td>
<td>RVDs</td>
<td>% Change</td>
<td>RVDs</td>
</tr>
<tr>
<td>Water-based uses</td>
<td>0</td>
<td>0</td>
<td>1.400</td>
<td>+75</td>
<td>0</td>
<td>0</td>
<td>3.500</td>
</tr>
<tr>
<td>Fishing, hunting &amp; trapping</td>
<td>45.000</td>
<td>-6</td>
<td>25.500</td>
<td>+5</td>
<td>0</td>
<td>0</td>
<td>9.000</td>
</tr>
<tr>
<td>Off-road vehicle use</td>
<td>1.600</td>
<td>-15</td>
<td>600</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cave use</td>
<td>10</td>
<td>-40</td>
<td>10</td>
<td>-75</td>
<td>2.000</td>
<td>-123</td>
<td>0</td>
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<tr>
<td>Sightseeing and other recreation use</td>
<td>66.000</td>
<td>+450</td>
<td>32.500</td>
<td>+30</td>
<td>0</td>
<td>0</td>
<td>1.000</td>
</tr>
<tr>
<td>Total use</td>
<td>112.610</td>
<td>-25</td>
<td>60.010</td>
<td>-19</td>
<td>2.000</td>
<td>-123</td>
<td>1.000</td>
</tr>
</tbody>
</table>

<sup>1</sup> Includes only underground cave use, other recreation use taking place on the surface is included in West Slope Special Recreation Management Area or Cody Extensive Area.

<sup>2</sup> Includes some BOR withdrawn lands.
Environmental Consequences

ning area, where ORV use would be limited to designated roads and trails; however, routes could be designated to allow access to areas that are now open to motor vehicles. There would be ample challenges for most ORV enthusiasts in 85% of the planning area.

The establishment of ORV play areas near Lovell (Bentonite Hills and Lovell Lakes) could reduce the level of dispersed ORV use or adjacent lands in the Bighorn Canyon National Recreation Area.

While it would be necessary to protect the public, closing of areas around shooting ranges to ORV use could reduce the size of the Bentonite Hills ORV play area. In addition, because that area would not be closed to locatable mineral development, its use for ORV activities could be lost. However, other areas could be designated for this use.

Restrictions on exploration for and development of locatable and locatable minerals would prevent degradation of important recreational resources. Specifically, the "no surface occupancy" restriction would protect major cave passages. River tracts, recreation sites, and significant caves also would be protected by closures to location of mining claim.

ORV restrictions and restrictions placed on mineral development would stabilize opportunities for semiprimitive nonmotorized recreation in 2% of the planning area. (See table 43 in the draft RMP/EIS and the Additions and Corrections for chapter 4.)

No significant adverse effects on recreation resources would be expected to result from possible sale of public lands provided easements could be maintained or established for public access across the patented lands where necessary. No significant effects would result from termination of BOR withdrawals and C&MU classifications.

Recreation use under the proposed plan would remain at a level of about 1,500 RVDs in the Carter Mountain proposed ACEC.

Recreation use in the Chapman Bench proposed ACEC would remain at fewer than 50 RVDs per year.

Recreation use in the Five Springs Falls proposed ACEC would continue to be about 800 RVDs per year. Additional interpretive signs, restrictions on climbing and hiking, and closure of the proposed ACEC to ORV use would not affect the recreation opportunities.

Recreation use in the Little Mountain proposed ACEC would increase to about 1,500 RVDs annually because of the establishment of visitor services, construction of facilities, and use of directional and interpretive signing. Cave use would make up 60% of this increase in use, and hunting, fishing and sightseeing would account for the remainder. Limitation of ORV use to designated roads and trails would reduce adverse effects on caves while allowing access throughout the proposed ACEC.

Recreation use in the Sheep Mountain Anticline proposed ACEC would increase to about 3,500 RVDs per year.

Soils

The proposed plan would lead to reductions in accelerated soil erosion in both the short term and the long term (see table 44 in the draft RMP/EIS). A decrease of about 60,700 tons in the short term and 490,600 tons in the long term would result largely from changes in grazing and recreation management. Effects on soils from range management would increase in the short term by about 6%, but they would decrease by about 17% in the long term.

Limitations on ORV use and concentration of recreation in designated areas would bring about a 37% reduction in recreation-caused soil impacts.

Soil loss in the Carter Mountain proposed ACEC would be reduced significantly from the current level because of ORV restrictions.

Soil loss would remain about the same in the Chapman Bench proposed ACEC despite the management objective to reduce vegetative height and density before the long-billed curlew and mountain plover nesting season.

In the Five Springs Falls, Little Mountain, and Sheep Mountain Anticline proposed ACECs, soil impacts would result from exploration and development of locatable and locatable minerals, livestock grazing, right-of-way construction, and ORV use. The levels of these impacts under the proposed plan would be somewhat less than under present management because of restrictions on surface-disturbing activities, including ORV use.

Vegetation

ORV use would be restricted more under the proposed plan than at present, therefore, there would be fewer effects on vegetation.
Environmental Consequences

Under the proposed plan, vegetation would be partially or totally removed by surface-disturbing activities such as minerals exploration and development, construction, and timber harvesting. While some impacts from surface-disturbing activities are short term, others may last more than 20 years. For example, revegetation of bentonite mines in the eastern portion of the planning area is not very successful because the soils are poor and the area has low precipitation. Other long-term impacts would be caused by construction of permanent roads, structures, and other facilities.

Construction of drill pads, roads, pipelines, power lines and other facilities for oil and gas operations would result in the net loss of vegetation from about 200 acres per year. Geophysical exploration for oil and gas usually would disturb vegetation on less than 1 acre per mile of operation. It is estimated that 80% of the area disturbed by oil and gas related activities would be recovered by reseeding within three years. Reestablishment of vegetation on sites that have been disturbed for long periods would be difficult if topsoil became sterile or eroded away. 

Vegetation would be disturbed by activities associated with trenched and strip mining for locatable and salable minerals, especially bentonite. For example, vegetation cover is removed or destroyed from areas that are used for trenching, mining, haul roads, and storing overburden and topsoil. In most cases, the poor growth medium of the soil types and the low precipitation in areas where bentonite is found have made it impossible to replace the original vegetation community through reseeding. Net surface productivity is reduced by more than 400 acres per year by bentonite mining. This is about 20 acres per year by sand and gravel mining.

The area needed for sanitary landfills usually is about 3 acres per 10,000 people per year. Vegetation on haul roads and storing overburden and topsoil would be disturbed for landfills in the planning area, approximating one for every 2,000 people. 

Farming on desert land entries would cause existing vegetation to be replaced by such irrigated crops as alfalfa, barley, corn, sugar beets, or dry beans. The value of production depends on crop yield and price. The vegetative composition would be changed by the activities of crop production, including tilling of soil, seeding of crops, irrigation, application of fertilizers, herbicides, and insecticides. 

After about 20 years, range management activities (stocking rate adjustments, use of grazing systems, and range project developments) would result in range condition ratings of 27% poor, 31% fair, 21% good, and 4% excellent. The remaining 17% covers range sites that are unconditioned at present (see table 1 in appendix C).

Vegetative manipulations to increase plant species diversity and protective fencing would improve the condition of 9,600 acres within 10 years. Range project construction would cause a short-duration removal of or reduction in vegetation on 27,000 acres, but these projects would improve range condition to good or better after 20 years.

Proposed wild horse numbers would be at a level that would stabilize current range conditions in most of the herd area. No improvement in condition would be expected on 62,000 acres in the herd area, but vegetation on 7,660 acres would be improved by at least one condition class, primarily through natural regeneration. The condition of vegetation on about 2,700 acres of prairie dog towns would remain static or continue to decline. Prairie dog towns of about 225 acres would improve range condition.

Forest management activities would reduce age class and plant species diversity on 500 acres after 20 years. Vegetative improvement (thinning) would occur on 970 acres after 10 years. 

The possible sale of public lands under the proposed plan would have no significant adverse effects on vegetation resources. No significant rare plants are known to exist on lands identified as potentially suitable for disposal. Any significant vegetative resources on these lands probably would be discarded because of the low vegetative productivity that would be conducted during evaluation of sale proposals, and the sale could be delayed if necessary. 

No significant adverse effects on vegetation would be expected from termination of BOR withdrawals and ACEC use. No effects on vegetation would be expected under the proposed plan from management actions in any of the proposed AECES.

Wild Horses

The effects on wild horses from the proposed plan would be the same as those under alternative A for the draft RMP/EIS. For example, there would be no permanent impacts on about 20% of the area disturbed by mineral exploration and development, right-of-way construction, timber harvesting, livestock grazing, and ORV use.
Wildlife and Fish Habitat

Fisheries

Improvement of fisheries habitat generally would parallel that for wetlands. Establishment of proposed grazing practices would result in development of stream and reservoir habitat improvement projects would benefit many species. Stream flow would benefit primarily through natural habitat recovery associated with reduced livestock use of stream zones.

Streamside vegetation would increase, resulting in narrower and deeper channels with overhanging banks. As the channels narrowed, rubble and gravel bottoms would become cleaner and more conducive to spawning and fish food production. With implementation of improved stream systems, erosion and peak runoff from uplands would be reduced, resulting in further improvement of stream and reservoir habitat conditions.

Creation of new water development projects would create new reservoir fisheries and would help to attract livestock away from stream zones. Construction of new reservoirs would result in creation of additional fisheries habitat.

Reduction of stream channel and upland erosion would decrease turbidity and sedimentation of fisheries habitat in streams and reservoirs. Improved watershed conditions would cause peak flows and increase more desirable flows during low water periods, improving fish habitat conditions in both perennial streams and reservoirs.

Overall, implementation of the proposed plan would be consistent with the trend of perennial stream habitat and improve about 40% of the stream miles by at least one condition class. The decline of existing reservoir fisheries habitat would be slowed or temporarily halted. Construction of new reservoirs with fish support capability would increase the total standing water fish habitat.

Wildlife Habitat

Terrestrial Habitats and Animal Communities

The effects on wildlife habitat that could be expected to occur under the proposed plan are shown in Table 46 in the draft RMP/EIS.

The revision and implementation of the Rattle snake Management Plan would lead to better integration of forest management practices and wildlife management practices. Actions carried out under the proposed plan would improve animal species diversity and the quality and diversity of habitat in 5,900 acres (46%) of high-value forestland. The plan would benefit approximately 160 wildlife species, including acorn woods, cavity-nesting owls, moose, and elk.

Recreational activities in wetland habitats during breeding seasons would increase stress on breeding animals and would decrease wildlife production.

Production and Recovery Habitat for Endangered Species

During the next ten years, approximately 2,500 acres of black-footed ferret recovery habitat would be improved. This improvement would be achieved by human intrusions into certain activities associated with bentonite mining. Bald eagles probably would not be affected on a long-term basis; however, bald eagle production could be lowered by mining activity in 10 to 25 years. All potential bald eagle recovery habitat would be incorporated into the Yellowtail Wildlife Habitat Management Unit and managed for eagle production and winter support. This would be expected to result in the establishment of one new eagle nest within ten years and the improvement of 230 acres of winter support habitat.

Six nesting pairs of American peregrine falcons would be expected to winter in the planning area in the next ten years. Peregrine falcon reintroductions would be carried out as described for Alternatives A and B in the draft RMP/EIS. The proposed plan also would promote bald eagle and peregrine falcon recovery on lands administered by the National Park Service (NPS) in the Bighorn Canyon National Recreation Area.

Production and Recovery Habitat for Candidate Species

The quality of production habitat for long-billed curlews and mountain plovers would be reduced in the next ten years. Human intrusions and other disturbances from oil and gas activity would occur on about 450 acres (2%) of such habitat both inside and outside the Chapel Benches proposed ACEC. One nesting pair of one of those species would be eliminated. The ACEC proposal would reduce the total number of habitat areas by about 6,000 acres of foraging and production habitat for curlews along Sand Coulee. New habitat would be expected to increase the breeding curlew population by 50%.

The proposed plan would include improved resource protection measures for new foraging areas. More than four breeding pairs of ferruginous hawks would be expected to breed successfully during the next ten years, but the potential for species recovery would be lower than under existing management. Swainson's hawks would not be affected by management actions under the proposed plan.

Production and Staging Habitat for Waterfowl and Water Birds

The quality of 900 acres (2%) of sandhill crane fall staging/recovery habitat would be reduced in the next ten years by human intrusion and other disturbances due to oil and gas activities. This would cause a 1% reduction in the 1984 crane recovery production and staging habitat.

With restrictions on power line construction near major river drainages, power line collision mortality of waterfowl and resident water birds would still occur at an undetermined level, but the number would be expected to be lower than existing management actions.

Fewer invertebrate prey animals would be lost under the proposed plan than under existing management because of restrictions on chemical control of noxious weeds. This would improve the production of waterfowl, double-crested coots, and great blue herons.

Raptor Production Habitat

Human intrusions and disturbances from bentonite mining activities would eliminate 520 acres of raptor production habitat during the next ten years. This probably would lead to one nesting pair of hawks being abandoned.

Collision mortalities of certain raptor species would be expected to be lower under the proposed plan because of restrictions on the construction of aboveground power lines along major rivers. These are the areas where most wetland habitats, flight routes to feeding areas, and migration corridors are found.

Grouse Production Habitat

Human intrusion and other disturbances related to bentonite mining would eliminate one sage grouse strutting ground in the next ten years, and the quality of 1.100 acres of sage grouse habitat would be lowered.

Adverse effects on sage grouse and sharp-tailed grouse would be less likely under existing management. In some cases, the proposed management objective under the proposed plan to limit surface disturbances to no more than 10% of suitable nesting habitat within 2 miles of dancing grounds would lead to improvement of vegetation that the plants could replace under normal climatic conditions. On approximately 144,000 of these acres, use would be extensive enough to remove from all of the plant groups more total vegetation than the amount that would normally be replaced. These conflicts would affect pronghorn populations in the Badger Basin, Carter Mountain, and Crystal Creek herd units. The affected public lands support 43% of the summer pronghorn population and 45% of the winter pronghorn population in those herd units. Without recovery, this could result in a loss of 2% of the existing pronghorn population (see Table 47 of the draft RMP/EIS).

Competition for forage would occur between livestock and elk on about 99,000 acres of the elk habitat on public land. The grazing use of some of the plant groups (grasses, forbs, shrubs) on these lands would exceed the amount of vegetation that the plants could replace under normal climatic conditions. On approximately 34,000 of these acres, use would be extensive enough to remove from all of the plant groups more total vegetation than the amount that would normally be replaced. Conflicts would affect elk populations in the Carter Mountain, Clark Folk, Horse Creek, Northeast Bighorn, and North Fork Shoshone herd units. The affected public lands support 43% of the summer elk population and 7% of the winter elk population in those herd units. Including all areas of concern, 35,000 acres of the crucial winter habitat and parturition habitat for elk on public land.

Surface disturbance and other activities associated with mineral development would reduce elk crucial winter habitat by about 190 acres and would reduce parturition habitat by about 80 acres. The quality of 6,500 more acres of elk parturition habitat would be lowered.

Localized human disturbances from ORV traffic would displace elk populations occupying winter ranges and calving ranges and probably would cause mortality.

Management actions such as plantings to improve vegetative species diversity, management of vehicle access, and timber harvest to increase habitat would be conducted on 5,900 acres (46%) of the dense conifer elk support habitat on public land in the planning area.
Environmental Consequences

Cumulatively, the effects on elk from the proposed plan would result in a net loss of 7% of the existing elk population.

Competition for forage would occur between livestock and deer on about 581,000 acres of the rangeland and white-tailed deer habitat on public land. The grazing use of some of the plant groups (grasses, forbs, shrubs) on these lands would exceed the amount of the vegetation that the plants could replace under normal climatic conditions. These areas of these plant groups use would be extensive enough to remove from all of the plant groups more total vegetation than the amount that would normally be replaced. These conflicts would affect bighorn sheep populations in the Francis Peak, North Big Horn, Trouh, Peak, and Wapiti ridge herd units. The affected public lands support 2% of the summer and winter populations in those units. Areas of conflict are 10,300 acres (57%) of the crucial winter habitat for bighorn sheep on public land. Over a ten-year period, these effects would result in a net loss of 2% of the existing sheep population.

Effects on Socioeconomic Conditions

Agriculture

General Effects

Under the proposed plan, the annual allowable forage levels and related output revenue, personal income, and employment would be lower than either forest-level levels that were projected if existing management had been continued. The number of AUMs for the present management plan would be lower than that projected if existing management had been continued. However, in the long term, some of this loss would be regained, so that by the 20th year the proposed plan would allow for the same levels of output revenue and employment as the present management plan.

Output Revenue

10 Years under the proposed plan implementation, BLM-administered AUMs would support about $21.7 million of the two-county area's annual direct livestock sector revenue. This is approximately $1.8 million less than that projected under continuation of existing management. By the end of 20 years, the amount under the proposed plan would be $22.7 million in direct revenues, or approximately $800,000 less than would have been projected if existing management had been continued. The total annual direct revenue realized by the area's livestock sector in the 1985-86 base period (utilizing both public and private AUMs) was about $70.5 million.

Minerals

General Effects

The following socioeconomic analysis addresses only resource area oil and gas activities over time. Other minerals are not included because they accounted for less than 1% of the assessed value of area mineral output in 1984 and 1985. But were not expected to change meaningfully over the period of planning implementation of 10 to 20 years. However, it can be noted that, benthic related mining, milling, and hauling is relatively

Environmental Consequences

The decline in direct output revenues under this alternative would lead to subsequent declines in indirect and induced output revenues (direct plus indirect plus induced) supported by BLM-administered livestock. The proposed plan would result in slightly more than $56 million by the 10th year and nearly $59 million by the 20th year. By comparison, BLM-administered AUMS currently support almost $61 million in total annual area revenues. Under continuation of present management, the current level of output revenues would continue to decline until it would be $60 million in 20 years. In 1985-86, the total area livestock sector supported about $153 million of total area output revenue.

Personal Income

The total livestock sector accounted for almost $22 million in direct plus indirect plus induced annual personal income in the two-county area. BLM-administered AUMS would decline from one-third of this total. Under the proposed plan, the total annual personal income supported by BLM-administered AUMS would decrease from both current levels and levels projected if existing management had been continued. By the 10th year, the total annual personal income would $60.5 million. However, by the 20th year it would be $20.5 million

Employment

About one-third of the two-county area's livestock-related employment is supported by BLM-administered AUMS. Workers supported by the area's livestock sector activities totalled approximately 2,940 in the 1985-86 base period. BLM-administered AUMS supported about 879 of these. Under the proposed plan, the total employment supported by BLM-administered AUMS would decline from current levels by 69 positions in 10 years. By comparison, the total annual number of area positions supported by BLM-administered AUMS would not change during the first 10 years under existing management but it would decrease by about 12 positions in 20 years. Under the proposed plan, some improvement would occur by the 20th year, so that the total employed could be only 29 positions lower than the level that would result from continuation of present management.

Forestry

Output Revenue

It is projected that annual harvesting of sawtimber and fuelwood from BLM-administered land under the proposed plan would equal present- sent levels of 500 MBF and 1,550 cords, respectively. Therefore it is also expected that the out- put would be expected to range between $12,000 and $20,000 annually. That estimate is based on a $10 to $20 per MBF and a $1 to $4 per cord fuelwood return.

It is estimated that most of the sawtimber sold by the BLM would continue to be thinned within the existing management areas and that it would represent about 5% of all sawtimber harvested in the two-county area. Output revenues under the proposed plan would be expected to range between $21,000 and $35,000 annually. It is estimated that the majority of timber harvested from BLM-administered lands in the planning area would continue to amount to 1% to 3% of the direct output revenue from the total forestry sector in the two-counties (Big Horn and Park). The two-county area's forestry sector is responsible for about 8% less than average area revenue output (direct plus indirect plus induced).

Personal Income

It is projected that personal direct income derived from the two-county area's entire forestry sector would continue to total slightly more than $300,000 per year, with $6,000 to $9,000 attributed to harvesting on BLM-administered land. When indirect and induced effects also are included, the total area value of timber harvested from BLM-administered lands would decline from current levels to about $472,000 to total area income, of which $7,000 to $11,000 would be the result of timber harvested on BLM-administered lands.

Employment

Harvesting activities related to BLM-administered lands would result in direct employment of one worker to one year of total employment annually under the proposed plan. The two-county area's total forestry sector provides only 35 workers when direct employment is included.

Minerals

General Effects

The following socioeconomic analysis addresses only resource area oil and gas activities over time. Other minerals are not included because they accounted for less than 1% of the assessed value of area mineral output in 1984 and 1985. But were not expected to change meaningfully over the period of planning implementation of 10 to 20 years. However, it can be noted that, benthic related mining, milling, and hauling is relatively

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important to the economy of the Greybull-Lowell area of Big Horn County. As a group, these activities employ about 200 persons and provide annual direct earned income of between $4 and $4.5 million. This amounts to an estimated 3% to 4% of Big Horn County's total annual earned income and about 1% to 2% of the total resource area's annual earned income.

Oil and gas out put in the Cody Resource Area, including that from BLM-administered mineral estate, is projected to decline significantly over the first 10 to 20 years of plan implementation. Under present production methods, the total annual oil output in the area in 1998 is expected to be about 42% less than in 1984, and the total annual gas output is projected to be only about one-fourth as large in 1998 as in 1984. These declines are expected to occur as the area oil and gas fields are further depleted.

There is a chance that a proposed carbon dioxide pipeline could make possible some additional recovery from tertiary injection procedures over time, thus slowing the projected decline in output. However, there is no indication of when, or if, such injection procedures would be carried out, to which fields they would be applied, or how much residual oil such procedures would yield. In addition, some wells have been shut in because of low oil prices in recent years. If these were reactivated in response to price increases, that change would help to slow the projected output decline to some extent.

Output Revenue

Because of the uncertainties related to world oil supply and related price movements, it is difficult to estimate average oil and gas prices over time. However, reported per-unit prices were applied to 1984 and 1985 oil and gas output for this analysis. For 1986 and beyond, per-unit price estimates are based on the projections of various mineralists and publications.

It is estimated that the direct sales value of annual oil production in the resource area in 1998 will be about half that of 1984. This projection is based on an estimated price per barrel of $14.50 for oil and $1.80 for gas. This would be a drop in direct annual revenues of roughly $240 to $225 million below 1984 area revenues. About 50% to 55% of 1984 resource area oil revenues were from BLM-administered mineral estate oil output.

It is projected that annual resource area gas output value would total less than $3 million in 1998, or almost 70% below 1984 output value. Roughly half the resource area gas output value in 1984 was attributable to production from BLM-administered mineral estate.

At an estimated $270 to $275 million, the combined value of annual oil and gas output in 1998 would be about 50% to 55% below the 1984 output value. This translates into a total (direct plus indirect plus induced) drop in annual area business activity of between $395 and $400 million by 1998.

Personal Income

The oil and gas sector of the resource area provided approximately $26 million in annual area direct personal income in 1984, with about 50% to 55% attributable to production from BLM-administered mineral estate. By 1998, the area's total annual direct personal income from oil and gas sector is expected to have declined to slightly over $12 million. When income from the resource area supporting oil and gas activities is included, the estimated total gas and oil related personal income in 1998 would be about $20 million, or roughly $23 to $24 million less than in 1984.

Employment

The resource area's annual direct employment by the oil and gas sector in 1984 was about 965 work-years (fulltime equivalents). It is projected that this would decline to fewer than 550 work-years annually by 1998. The addition of indirect and induced employment related to area oil and gas activities brings the total employment to roughly 1,700, which is between 40% to 50% below the 1984 annual level. More than half the resource area employment related to oil and gas in 1984 is attributed to BLM-administered mineral estate.

Recreation

General Effects

The total number of RVDs projected for the joint county area under the proposed plan would be almost 1.4 million per year. This is about 6% more than the total projected if the current management plan were continued. This increase would result entirely from a higher incident of nonconsumptive activities. Cumulative recreational activities on BLM-administered lands would account for about 3% of the total RVDs on that land and contribute more than $3.6 million in direct annual area output revenues.

Environmental Consequences

Environmental Consequences

Output Revenue

Annual direct output revenue from the total joint county area recreational activities would approach $32 million. About one-fourth of this would be expected if BLM-administered lands. Approximately 55% of the $32 would be produced by the resource area's nonconsumptive activities. BLM-administered lands would be expected to support about 15% ($2.7 million) of the two-county area's direct annual revenues from nonconsumptive activities and about one-third ($3 million) of the two-county area's direct annual revenues from consumptive recreation.

About 90% of all the area pronghorn hunting and 80% of the sage grouse hunting would occur on BLM-administered land under the proposed plan. In the nonconsumptive activities, BLM-administered lands host 100% of the area caving, more than 50% of the sightseeing, and about one-third of the picnicking.

Under the proposed plan, including indirect and induced revenues related to area support of the recreation sector, total annual revenues would exceed $61 million, with BLM-administered land supporting about $15 million of that total. Total revenues under the proposed plan would be 2% to 3% higher than if present management had been continued.

Personal Income

Under the proposed plan, recreation in the two-county area would support a total of almost $7 million in direct personal income annually and more than $10.4 million in total annual area income. BLM-administered lands would support about one-fourth of these totals. Total personal income would be about 2% to 3% higher than under continuation of present management.

Employment

The total area employment related to recreational activities under the proposed plan is projected at 790 jobs, about 20 jobs higher than would be expected if present management had been continued. Recreation on BLM-administered lands would support about 192 of these positions. Approximately 68% to 70% of the total employment represents positions directly attached to the recreation sector rather than to support sectors.

Unavoidable Adverse Impacts

In addition to the natural annual soil loss of about 1,420,000 tons, the annual accelerated soil losses under the proposed plan would be about 2,587,600 tons in the short term and 2,157,700 tons in the long term.

Short-Term Uses versus Long-Term Productivity

Intensive forest management under the proposed plan would increase the productivity of timber stands by 80% to 100%

Proposed range projects and intensive management systems eventually would improve overall range condition. A cumulative loss in upland soil productivity and rehabilitation potential would be caused by annual accelerated erosion of about 2,587,600 tons of soil in the short term and 2,157,700 tons in the long term. About 10% of this soil would be lost as sediment to the streams that drain the planning area. Soil compaction would reduce soil productivity and moisture infiltration.

Annual sediment loads would increase by about 23,000 tons in the short term but decrease by about 83,000 tons from existing sediment loads in the short term. Changes in range management would increase sediment yields by 10,100 tons in the long term. About 10% of the BLM-administered land support about 50,000 tons through restrictions on recreation, and by 2,100 tons through restrictions on surface disturbing activities for the protection of fragile soils and wildlife habitat.

Irreversible and Irretrievable Commitment of Resources

The losses in productivity from timber stands left as overmature growth would continue at approximately 200 MBF per year.

Short-term soil losses would be caused by proposed range projects; however, those losses would be offset by increases in soil protection afforded by improved vegetation cover.
ADDITIONS AND CORRECTIONS FOR CHAPTER 4

Changes to chapter 4 of the draft RMP/EIS are shown in the following list.

ADDITIONS AND CORRECTIONS FOR CHAPTER 4

Page numbers refer to pages in the draft RMP/EIS. A partial paragraph at the top of a column counts as paragraph 1. The changed or added material in the “Should Read” column is in bold type.

### Environmental Consequences

Surface rehabilitation and watershed manipulation would cause short-term soil losses on specific sites; however, these impacts would be insignificant, and more than offset by long-term benefits.

On about 20% of the surfaces disturbed by various activities, the disturbance would be long-term or permanent.

ADDITIONS AND CORRECTIONS FOR CHAPTER 4

Changes to chapter 4 of the draft RMP/EIS are shown in the following list.

<table>
<thead>
<tr>
<th>Draft Page</th>
<th>Column</th>
<th>Paragraph</th>
<th>Line(s)</th>
<th>Should Read</th>
</tr>
</thead>
<tbody>
<tr>
<td>221 1</td>
<td>6</td>
<td>2</td>
<td>... allowed for only 3.5 months on 3,500 acres each year</td>
<td></td>
</tr>
<tr>
<td>227 2</td>
<td>4</td>
<td>Replace last sentence with</td>
<td>Localized activities resulting in soil losses of 75 to 80 tons per acre (such as oil and gas development) would merit more immediate site-specific mitigating measures, while more widespread activities that cause losses of 1 to 4 tons per acre (such as livestock grazing) would call for longer-lasting mitigating measures.</td>
<td></td>
</tr>
<tr>
<td>228 1</td>
<td>1</td>
<td>1</td>
<td>... would be implemented to improve vegetative condition</td>
<td></td>
</tr>
<tr>
<td>232 1</td>
<td>2</td>
<td>2, 3</td>
<td>... by the notice to lessor NTL-2B.</td>
<td></td>
</tr>
<tr>
<td>232 3</td>
<td>3</td>
<td>7 to 9</td>
<td>water generally is subject to approval through the Underground Injection Control (UIC) permitting process, which is administered by the Wyoming Oil and Gas Conservation Commission.</td>
<td></td>
</tr>
<tr>
<td>234 1</td>
<td>1</td>
<td>4</td>
<td>... water enough to impair its use</td>
<td></td>
</tr>
<tr>
<td>248 2</td>
<td>3</td>
<td>6</td>
<td>Soil losses would continue at present levels in the Chapman Bench.</td>
<td></td>
</tr>
<tr>
<td>250 1</td>
<td>6</td>
<td>10</td>
<td>... 24,680 tons (1%) associated with...</td>
<td></td>
</tr>
<tr>
<td>251 2</td>
<td>2</td>
<td>2</td>
<td>In Table 33, change “10.8” to “10.800” (for the Existing Sediment Loading in tons per year for Dry Creek in the Big Horn River Subbasin)</td>
<td></td>
</tr>
<tr>
<td>252 2</td>
<td>6</td>
<td>1</td>
<td>The impacts of forest habitat improvement, recreational activities...</td>
<td></td>
</tr>
<tr>
<td>252 2</td>
<td>7</td>
<td>Following 7 insert new paragraph</td>
<td>The effects on bald eagles would be the same as those described for Alternative A.</td>
<td></td>
</tr>
<tr>
<td>254 1</td>
<td>1</td>
<td>9</td>
<td>... base production habitat. These impacts would further reduce raptor production by 5 to 10%.</td>
<td></td>
</tr>
<tr>
<td>254 2</td>
<td>1</td>
<td>10</td>
<td>strutting grounds. The effects of oil and gas exploration and development on sage grouse would be the same as those of Alternative A except that five more strutting grounds would be lost because the seasonal restriction to protect nesting birds would be eliminated in some areas.</td>
<td></td>
</tr>
<tr>
<td>254 2</td>
<td>2</td>
<td>1</td>
<td>The effects on elk from forest habitat improvement, minerals exploration and development, and ORV use...</td>
<td></td>
</tr>
<tr>
<td>255 1</td>
<td>2</td>
<td>1</td>
<td>The effects on deer from forest habitat improvement, minerals exploration and development, and ORV...</td>
<td></td>
</tr>
<tr>
<td>255 1</td>
<td>4</td>
<td>Following 4 insert new paragraph</td>
<td>The overall effects of mineral-related activities on elk and deer habitats would be the same as those described in Alternative A, despite the loss of seasonal restrictions in some areas.</td>
<td></td>
</tr>
</tbody>
</table>
| 258 1 | 7 | 1, 2 | In grizzly habitat areas approval of new activity on existing leases could be subject to...
CONSISTENCY

Coordination with other agencies and consistency with other plans were accomplished through frequent communications and cooperative efforts between the BLM and involved federal, state, and local agencies and organizations. The Wyoming Governor's Clearinghouse was supplied with numerous copies of the draft document for review to ensure consistency with the state's ongoing plans. The RMP team reviewed land use plans for Big Horn and Park counties to ensure consistency. BLM personnel have met with the respective county planners and commissioners to promote greater understanding of goals, objectives, and resources of both the counties and the BLM.

CONSULTATION AND COORDINATION

Members of the Cody RMP EIS team have consulted formally or informally with numerous agencies, groups, and individuals during development of the plan. The following list is a representation of the businesses, agencies, organizations, and individuals that have participated during the planning process. This list is not inclusive. A complete list is on file in the Cody Resource Area office.

CONSULTATION AND COORDINATION

Members of the Cody RMP EIS team have consulted formally or informally with numerous agencies, groups, and individuals during development of the plan. The following list is a representation of the businesses, agencies, organizations, and individuals that have participated during the planning process. This list is not inclusive. A complete list is on file in the Cody Resource Area office.

Required Reviewers

United States Department of the Interior
Office of Environmental Project Review, Denver, CO
Bureau of Land Management, Washington, DC
Bureau of Land Management, Cheyenne, WY
National Park Service, Division of Environmental Compliance, Washington, DC
U.S. Fish and Wildlife Service, Division of Environmental Coordination, Washington, DC
Minerals Management Service, Office of Environmental Assessment Division, Washington, DC
Bureau of Reclamation, Division of Environmental Affairs, Washington, DC
Bureau of Mines, Mineral Data Analysis, Washington, DC
Geological Survey, National Center, Reston, VA
Department of Defense
Department of the Air Force
Assistant Secretary of the Air Force, Install. Environ. Safety, Pentagon, Arlington, VA
HQ USAF/LEEP, Tyndall AFB, FL
HQ USAF/DP, Offutt AFB, NE
HQ USAF/LEHX, Office of Environ. Planning, Bolling AFB, Washington, DC
Department of the Army
Corps of Engineers, Omaha, NE and Portland, OR
Department of Energy, Washington
Nuclear Regulatory Commission, Bethesda, MD
Environmental Protection Agency, Denver, CO
Wyoming State Planning Coordinator, Cheyenne, WY

Other Reviewers

Federal Agencies

Department of Agriculture
Soil Conservation Service
Forest Service
Farmers Home Administration
Department of Energy
Western Area Power Administration
Department of the Interior
Bureau of Indian Affairs
Department of Justice
National Park Service
Fish & Wildlife Service
Bureau of Land Management (other offices)
Department of Transportation
Federal Highway Administration
Environmental Protection Agency

Federal Elected Officials

Office of Senator Alan K. Simpson
Office of Senator Malcolm Wallop
Office of Representative Dick Cheney

State Agencies, Commissions, and University

Office of the Governor of Wyoming
State of Wyoming
Department of Environmental Quality
Department of Agriculture
Game & Fish Department

Gale Wofford, Wyoming Senator
Richard Vedder, Wyoming Senator
Malcolm L. Wallop, Wyoming Senator
Dick Cheney, Wyoming Senator

Geological Survey
Highway Department
State Engineer
Conservation Commission
Recreation Commission
Board of Land Commissioners
Water Development Commission
University of Wyoming

State Legislators

State senators and state representatives from Big Horn, Hot Springs, Park, and Washakie counties

Counties and Cities

Mayors offices of Basin, Burlington, Byron, Cody, Cowley, Deaver, Frairne, Greybull, Lottel, Meeteetse, and Powell
County Commissioners of Big Horn and Park counties

DISTRIBUTION

In addition to the agencies and offices listed above, notices, requests for comments, and copies of this document have been sent to businesses, organizations, interest groups, and individuals. Copies are available for review in the BLM offices in Cheyenne, Worland, and Cody and at the county libraries of Big Horn and Park counties.

Organizations, Businesses, and Individuals

The following list is not inclusive; rather, it is a representation of recipients of notices and copies of this document. A complete list is on file at the Cody Resource Area office.

Organizations

Absaroka Flycasters Club
American Cave Conservation Association
American Wilderness Alliance
Audubon Society - High Plains Chapter
Audubon Society, Murre Chapter
Basin Sportsmen's Club
Big Horn Basin Wildlife Club
BLM Lands Foundation
Earth First Foundation
North American Wild Sheep
Girl Scout National Center West
Hot Springs County Sportsmen's Club
Isaac Walton League of America
National Audubon Society
National Speleological Society
National Wildlife Federation
Natural Resources Defense Council

93

94
General Responses

1: Planning Tiers

Many commenters suggested changes to the RMP/EIS that are inappropriate for this stage of the BLM planning process. Some commenters suggested courses of action for the RMP that were inconsistent with the policy tier. Others suggested including a level of detail that is reserved for the more site-specific activity planning tier.

The BLM planning process is divided into three distinct tiers. Each subsequent tier builds on the base established by the previous one. The tiers are as follows:

- The policy tier identifies goals, objectives, priorities, and other factors for use in managing the public land resource. Policy is established in public laws, regulations, executive orders, court orders, guidance from BLM state directors, and approved documents issued by the President, the Secretary of the Interior, or the Director of the BLM.
- The resource management plan tier establishes in a land use plan the combinations of land uses and resource uses, related levels of investment and protection or production to be maintained, and general management practices and constraints for the various uses of the public lands. The RMP/EIS is a part of the resource management plan tier.
- The activity plan and implementation tier provides for evaluation and authorization of public land uses and the development of activity plans that are much more detailed, more site specific, and more limited in scope than the resource management plan tier. The main goal of the activity plan and implementation tier is to implement the RMP. This is initiated as necessary after an RMP is completed.

An activity plan or use authorization shows in detail how particular actions or projects are to be carried out site-specifically, either to conduct inventories to fill data gaps or to reframe our knowledge of the task at hand.

Environmental analyses will be carried out during development of activity plans. Public involvement in activity planning will be actively solicited as appropriate.

The RMP/EIS and approved RMP documents that are published and distributed to the public are not encyclopedic; that is, they do not include copies of all laws, regulations, policy or other source and reference materials pertinent to or used in their development. These types of materials are readily available from offices of the BLM or other federal agencies, state and local government agencies, or public libraries.

Published RMP/EIS documents do not contain all the information and analyses generated in conducting the planning process. This type of "planning report" documentation is part of the management situation analysis that is developed for each RMP and is on file at the appropriate BLM office (for example, the Cody Resource Area office). Members of the public may see the management situations analysis documentation upon request.

2: Content of the RMP/EIS

Many comments suggested that we include additional analysis or background information on the existing environment in the document. We
have included the suggested information in the proposed RMP/final EIS where we determined that the Clarks Fork of the BLM planning system (see general response 1) and that it was pertinent to the analysis or would help us to clarify management of the alternatives. If this was not the case, the information was not included in the final document.

The potential effects on various environmental components were carefully considered. If we determined that there would be no effect on a particular environmental component, it was not discussed in detail in the document.

An EIS is intended to be analytic in nature, not encyclopedic. The intent of chapter 3 in the draft document is to describe the environmental components that would be affected by implementation of the RMP. Some other information is presented in that chapter to give a general overview of the resource information. That information is not necessary or needed for an understanding of the analysis of the environmental consequences of the alternatives considered in the draft document. For this reason, the RMP/EIS does not contain a description of the total existing environment of the planning area.

3: Management of the Clarks Fork of the Yellowstone River and the Clarks Fork Canyon Area

Many comments were concerned with management of the Clarks Fork of the Yellowstone River and the Clarks Fork Canyon Area. Several comments indicated the Clarks Fork Canyon and the Clarks Fork of the Yellowstone River watersheds comprise a sizable portion of the fishable and hunting access lands that would be managed in cooperation with the WGFD. These lands on the Clarks Fork of the Yellowstone River comprise a sizable portion of the total fishing and hunting access lands in the planning area (see page 11 of the draft RMP/EIS).

Clarks Fork Canyon

Some comments suggested that the mouth of the Clarks Fork Canyon be designated an ACEC or an outstanding natural area so that scenic values would be emphasized. Under existing BLM guidance, lands located within scenic values would not be designated as such by those terms: rather, they would be covered by the more general "ACEC" designation. In addition to scenic values, the Clarks Fork Canyon area contains crucial winter habitat for big game, peregrine falcon recovery habitat, and historic values associated with the Nez Perce Trail. We have studied 3,800 acres of land in this segment for management and research needs. The proposition to designate the area as an ACEC for seasonality use is being considered by the agency. As we have documented in appendix J to this document, the area does not meet the criteria for importance necessary for designation as an ACEC.

Under the proposed plan, surface-disturbing activities would be prohibited in virtually all the lands considered for ACEC designation in the Clarks Fork Canyon area on the basis of slope limitation (see page 11 of the draft RMP/EIS). Parts of the area are subject to NSO and seasonal restrictions to protect peregrine falcon recovery habitat and big game crucial ranges.

The area also would be managed to maintain existing VRM class II objectives. This would necessitate selective vegetation and surface-disturbing activity so that scenic quality would not be impaired. Management of the Clarks Fork Canyon and Clarks Fork River areas would also be affected by the Rivers SRMA. The objective of this SRMA would be to maintain the existing natural and scenic characteristics of the Clarks Fork of the Yellowstone River and to maintain or improve access for public recreation on that river and on the North and South forks of the Shoshone River. An activity plan would be prepared for the SRMA after completion of the RMP.

4: Development in Proposed ACECs

Many comments revealed a lack of understanding of the reasons for designating an area an ACEC. Some comments before ACECs should be managed like wilderness areas with all or most forms of development prohibited. We hope that the addition of appendix J to this final document will clarify the procedure and purpose for ACEC designation.

The criteria for determining whether an area should be managed as an ACEC are discussed in appendix J. They include consideration of whether the area contains unique resources and values that, singly or in combination, make the area special. However, an area also may be designated an ACEC because of hazards. Thus, an ACEC is not necessarily a pristine, roadless area with a scenic quality characteristic only. An example of a designated ACEC that is unlike a wilderness area is Wind River Canyon in the BLM's Casper District. In that area, emphasis is placed on concerns for overland runoff that could cause soil erosion, sedimentation, and contamination of surface waters.

ACEC designation alone does not indicate a particular type of management for an area; rather, the criteria in appendix J to this document have been included to indicate management emphasis and in priority for the funding of management requirements in an ACEC. The management practices for a particular ACEC usually are prescribed in detail in a site-specific activity plan for the area.

The proposed plan states our intention to manage five proposed ACECs to emphasize and protect unique land and resource values: rare plants and animal ranges, wildlife habitat, unique caves, and scenic, geological, and recreational values. Appendix J contains descriptions of the land and resources for each of the proposed ACECs.

Management of the proposed ACECs for these values would include the use of restrictions developed from the Wyoming BLM standard mitigation guidelines for surface-disturbing activities (see appendix J). No new activity plan would be included in this proposed plan in chapter 3 of this document. The designated ACECs also would be closed to future location of mining claims, and the construction of new rights-of-way would be avoided in all five proposed ACECs. ORV use would be limited to designated roads and trails.

The other and these levels of restrictions were analyzed in the draft RMP/EIS. On the basis of the analyses, land use restrictions were identified that would adequately protect or enhance significant and unique land and resource values in the proposed plan. Management restrictions were proposed. Such restrictions would have unduly constrained potential future land use without benefiting the values of concern.

5: Multiple Use

A number of letters were received that asserted that the preferred alternative would allow "nearly unlimited land and gas development, livestock grazing, and ORV use," or words to that effect. Most of these letters urged that we prohibit or severely restrict these types of land use and other surface-disturbing activities. One commenter sent a copy of a newsletter, Eocacion, which contained similar thoughts.

The preferred alternative in the draft RMP/EIS represents the BLM's attempt to protect or allow development in an area only where it is necessary. We have not necessarily prohibiting or excessively constraining land use. The preferred alternative would protect or enhance significant and unique land and resource values in the planning area and would not a reasonable provide for multiple use of the public lands, nor would it prohibit or excessive restriction of ORV use and other major land uses.

As much as possible, the BLM tries to facilitate the coexistence of potentially conflicting land and resource uses. If the preferred alternative provides adequate protection for certain resources for which several writers expressed concern, the provision of the Endangered Species Act of 1973 provides for protection of endangered or threatened plant and animal species. BLM personnel work with the WGFD and the USFWS in planning the management of important wildlife habitat.

Existing laws, regulations, and policies provide considerable protection for cultural resources. Cultural inventories and mitigation are required on public surface before surface-disturbing activities. Such activities can result in the discovery and protection of cultural resources.
6: WGFD Population Objectives

Several committers noted that projected big game populations would be below WGFD population objectives in some areas under the preferred alternative. The BLM attempts to manage big game habitat to support WGF D population objectives in some areas under the State Historic Preservation Act regulations. However, during our analysis we found that in some cases even if we prohibited all livestock grazing and other consumptive uses of vegetation, the range would not support the big game habitat to support WGF D population objectives in some areas under the State Historic Preservation Act regulations.

TOPICS ADDRESSED

Key to Code: ACEC = areas of critical environmental concern; AIR = air quality; CR = cultural resources; F / M = fire management; HW = hazardous waste; LAN = lands and realty management; LGM = livestock grazing management; MIN = geology, minerals, and paleontology/restrictions on surface-disturbing activities; NS = no specific comment, no response required; ORV = off-road vehicles; PEO = general planning/ground water; RIP = recreation/caves/wild and scenic rivers; S / W = soils/water/water quality/development; VEG = vegetation/rare plants; VR = visual resources; W / F = wildlife and fish habitat; WH = wildlife and horse.

Lettors Received, and Responses

Introduction

The comment letters we received are listed in new table 2. The letters were numbered in the order in which they were received. The table shows the letter number, name of person or organization from whom the letter came, and the subject of the letter. The following are errors or omissions: (Tegeing errors or omissions and filing, one letter was counted twice, the second time as letter 88. This error was discovered too late to renumerate all the remaining letters; therefore, there is no letter 88.)

NEW TABLE 2

COMMENTS RECEIVED AND TOPICS ADDRESSED

Note: All comments received are listed. Numbers indicate the order in which the letters were received.

Letter Number Name of Organization or Individual Commenting Topic(s) Addressed

1 William Cochran, USDA, Bureau of Mines MIN

2 Jeannine R. Stollings, Wyoming Advocates for Animals ACEC

3 Kenneth R. Brown, Wyoming Resource Council PEO ACEC

4 Marc Pearson ACEC

5 Kristin Asplund ACEC

6 R G. Stanley, USDA, Fish and Wildlife Service ACEC

7 Frank S. Osborne, USDA, Soil Conservation Service LGM ACEC

8 Mildred J. Smith, M.D. LAN ACEC

9 Bernell Haas, The Nature Conservancy LGM ACEC

10 Press Stephens ACEC

11 John P. Schieffer, National Speleological Society, Inc. PEO

12 Archie Zacharias ACEC

13 Anvil T. Thomas, USDA, Corps of Engineers MIN, NS ACEC

14 Jim Allen, Allen Bros. Wilderness Outfitting & Guiding MIN ACEC

15 James W. Schmitt, Wyoming Geographic Information System ACEC

16 Lynne Chadwick, SWM ACEC

17 John A. Miller, Department of the Air Force MIN

18 Richard A. Stras, USDA, National Park Service MIN

19 Richard K. Brown, Wood-Bell, Inc. MIN

20
### NEW TABLE 2 (Continued)

**COMMENTS RECEIVED AND TOPICS ADDRESSED**

<table>
<thead>
<tr>
<th>Letter Number</th>
<th>Name of Organization or Individual Commenting</th>
<th>Topic(s) Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>Because of an oversight, we do not have a Letter No. 88</td>
<td>MIN,LGM,F</td>
</tr>
<tr>
<td>89</td>
<td>Jean Foor</td>
<td>MIN,LGM,ORV,ACEC,RIIP</td>
</tr>
<tr>
<td>90</td>
<td>Mary Ellen Shoemaker</td>
<td>MIN,LGM,ORV</td>
</tr>
<tr>
<td>91</td>
<td>Mary Ziegenhagen</td>
<td>MIN,LGM,ORV,ACEC</td>
</tr>
<tr>
<td>92</td>
<td>Elizabeth Stevenson</td>
<td>W/F,M,N,LAN,ACEC</td>
</tr>
<tr>
<td>93</td>
<td>Lisa Mercier. Chevron U.S.A., Inc</td>
<td>MIN,W/F,PEO</td>
</tr>
<tr>
<td>94</td>
<td>Neil W. Allen, Amoco Production Company</td>
<td>NS</td>
</tr>
<tr>
<td>95</td>
<td>Alan Edwards, Office of the Governor of Wyoming</td>
<td>PEO,ACEC,MIN,LAN</td>
</tr>
<tr>
<td>96</td>
<td>Paul Cleary, Wyoming State Land &amp; Farm Loan Board</td>
<td>ACEC,MIN,ORV</td>
</tr>
<tr>
<td>97</td>
<td>John M. Bugas</td>
<td>PEO,W/F,VEG,REC</td>
</tr>
<tr>
<td>98</td>
<td>Thomas H. Wiancko</td>
<td>PEO,W/F,CR,REC</td>
</tr>
<tr>
<td>99</td>
<td>Sandra C. Cahill</td>
<td>PEO,MIN,W/F,ORV,REC</td>
</tr>
<tr>
<td>100</td>
<td>Julie Holding</td>
<td>ORV,ACEC</td>
</tr>
</tbody>
</table>

The letters we received are reproduced in the following pages. Some handwritten letters have been typed verbatim to improve readability or to save space. Numbers have been inserted on each letter to identify individual comments, and correspondingly numbered responses to the comments follow each letter. When several consecutively numbered letters contain similar comments and concerns, those letters are reprinted as a group and one response is given following the group of letters.

**Response to Letter 1**

1. Thank you for your comments.
2.1

WYOMING ADVOCATES FOR ANIMALS
310 East Pingree Street
Cheyenne, WY 82001

RECEIVED
APR 13 1986

Mr. Bob Ross, Team Leader, BLM Cody R.A.,
Bureau of Land Management
Cody Resource Area
P.O. Box 558
Cody, WY 82414

Dear Mr. Ross:

Thank you for the opportunity to comment on the Cody Resource Management Plan, Draft EIS.

Our comments will be limited to wild horses.

The sections, with resulting alternatives, on wild horses are confusing and confusing. A summary, in our opinion, seems to be that:

1. Alternative A recommends no reduction
2. Alternative B states if the horses are reduced, it could harm the same pool
3. Alternative C says there is need to reintroduce horses into Foster Gulch if Alternative C is used
4. Alternative D calls for reduction, but no number is given, while still maintaining a reduction will maintain a healthy breeding herd

Is it the intent of Alternative D to reduce, raising that number to reintroduce into Foster Gulch? The above appears to be the Reagan Administration philosophy.

There are too many variables and too many unanswered questions where the welfare of the horses is concerned. Wyoming Advocates has no interest whatever in protecting the interests of grazing permit holders. Therefore, our only opinion can be, as usual, that the horses must be left alone intact, unharmed. No reductions of any sort in any area, placed there is simply a switching around of horses to different areas. Under no circumstances do we support any plan or alternative which results in horses being rounded up and kept in holding pens away for the adoption program.

The report issued by BLM in early March clearly establishes that slaughter and other damage has occurred solely from overgrazing resulting from the actions of ranchers, supported directly or indirectly by BLM's management policies. The wild horse has not been blamed in any manner for range damage.

Thus, it is time to bury forever the myth and fraudulently that wild horses are the sole destroyers of public lands. The BLM report puts the finishing touches on that for good.


2.2

Therefore, Wyoming Advocates opposes no introduction on the horses of any nature, they must be left alone. That is the only course necessary.

Sincerely,

Mrs. K. Staley

International Society
for the Protection of
Mustangs and Burros
 Reno, Nevada

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The proposed plan would prohibit surface-disturbing activities on slopes greater than 1%. This would have the effect of prohibiting disturbing activities on all but about 1% of the 9,289 acres proposed ACEC. New surface-disturbing activities generally would need to be located on areas already disturbed by a road, trail, or other previous use. Otherwise, access for proposed disturbances probably would require the use of a helicopter. This is because the slope restriction would make it difficult to build new roads for more than short distances.

We will carefully consider the Forest Service's evaluation of aeolian soil erosion before authorizing any surface-disturbing activities on Carter Mountain.

Environmental analyses will be conducted on any area where geothermal exploration is proposed. This will include a scientific assessment of the possibility of permanent detrimental impacts. Additional regulation in the area of geothermal exploration or leasing is beyond both the authority of this office and the scope of the RMP.

The BLM observes all state and federal regulations pertaining to the use and disposal of hazardous materials. As to monitoring of hazardous materials, our statement on page 24 of the draft RMP/EIS is meant to indicate that BLM will monitor the authorized land users and the precautions they take. These measures would be a required part of land use authorizations for any activity that could potentially involve hazardous materials or wastes. At present, operators are not required to develop monitoring wells at BLM-authorized lands. The primary responsibility for regulating hazardous materials lies with the Environmental Protection Agency (EPA) and the Wyoming DEC. Generally, these agencies would determine if and when monitoring wells would be required.

The BLM does not authorize the disposal of hazardous wastes on any public lands, and we have no indications that hazardous wastes have been disposed of in unauthorized lands on public land in the planning area.

The BLM's efforts to serve the public and prevent public land contamination include informing land users of hazards associated with certain materials and activities and encouraging understanding and compliance with the federal and state regulations that pertain to such materials. We also can inform the public where to find facilities that are authorized to dispose of materials we cannot permit on public land.

The BLM is unable to patrol thousands of acres of public land regularly with present funding and personnel levels, nor can we install monitoring wells without some indication of contamination. BLM employees and public land users are encouraged to be watchful for contamination sites and attempt at illegal disposal of hazardous materials. Also please see "Additions and Corrections to the Appendices" for further discussion on hazardous materials and wastes.

Water development projects initiated by the BLM are limited to those that support other resource programs or activities administered by the BLM. Examples are spring or well developments for livestock and wildlife and detention dams constructed for watershed stabilization. These developments are identified in activity plans such as grazing AMPs or wildlife HAMPs and site-specific environmental analyses conducted as part of the project planning phases. The BLM adheres to the Clean Water Act of the state of Wyoming because the state has the primary responsibility for allocating water resources in Wyoming.

The BLM has a procedure for evaluating the effects of water on public lands. This information is conducted on a continuing basis. BLM personnel determine water population levels and trends through monitoring of size, reproduction, use, and storage resources. The data are used to establish allowable use levels and the allowable number of wild horses. Excess horses are removed from the range when necessary.

The management actions relating to rights-of-way are on pages 27-29 of the draft RMP/EIS under the title "Utility Transportation Systems." This material deals with proposed right-of-way corridors and right-of-way avoidance and alternate access and is defined on page 343 and carried on page 344 in the Glossary of the draft document.

To avoid confusion, the proposed final EIS describes "section 203 of FLIPMA" as the public land sale authority of FLIPMA. Information concerning can be found in draft RMP/EIS on page 296 (appendix C) and on pages 302-303 (appendix E) of the draft RMP/EIS.

The role of advisory council is described in the Glossary Supplement in this document under "Advisory Council." As was indicated in the draft RMP/EIS, the Worland District Multiple-Use Advisory Council has been kept informed of the progress of the RMP, and comments and recommendations of the members have been considered. We will continue to consult the advisory council regarding further development of the plan.
4.1

Responses to Letter 4

1. Although they are not called "management emphasis areas" or "management prescription areas," the Code draft RMP/EIS proposes specific management actions for many discrete geographical units such as proposed ACECs, special recreation management areas (SRMAs), the McCullough Peaks wild horse herd area, black-footed ferret essential habitat, and peregrine falcon recovery habitat areas to name a few. The future management objectives and actions for these areas for the protection of the resources and land areas identified are described clearly in the draft RMP/EIS.

For information on the Canyon of Clark Fork of the Yellowstone, please see general response 3.

2. The areas that you mention would be covered all or in part by NSO restrictions for oil and gas exploration and development and by prohibitions against other types of surface-disturbing activities. In addition, many other areas in the planning area are covered by NSO and "no surface disturbance" restrictions.

The NSO restrictions and "no leasing" designations result in an identical level of protection for surface resources; therefore, we consider elimination of leasing unnecessary for the areas mentioned. Another consideration is that with the NSO restrictions, it is possible to obtain the royalties for federal oil and gas removed by off-site drilling, whereas lands where a no-lease provision would be in effect would be subject to drilling of federal oil and gas could be drained by off-site drilling on state, private, or other federal or lease-holders without compensation to the federal treasury.

In its various alternatives, the Code draft RMP/EIS includes consideration of a range of "no leasing," NSO, and "no surface disturbance" restrictions to protect various land and resource values. We believe that the range of options for protecting land and resource values and for allowing different levels of development meets NEPA requirements for an adequate range of alternatives. Also please see general response 5.

3. The Carter Mountain area has low potential for the occurrence of locatable minerals. There are no mining claims in the area now, and we do not anticipate the staking of mining claims in the future. Please see the response to comment 6 of letter 3 for a discussion of the restrictions on oil and gas exploration and development in the proposed ACEC. Also please see general response 4.

Most of the Carter Mountain proposed ACEC lies within the Carter Mountain grazing allotment, number 2904. This allotment is authorized for sheep use during the summer, but it has not been grazed for the past three years. A vegetation inventory of the allotment conducted in 1996 indicated that 44% of the vegetation communities were in good ecological condition and 47% were in fair ecological condition. The remaining 9% were unclassified. If livestock grazing should begin again in the Carter Mountain allotment, monitoring would be initiated to ensure protection of the unique vegetation.

4. The size of the Five Springs Falls proposed ACEC is 160 acres. Appendix J to this document gives more information about the proposed ACECs. Known occurrences of rare plants occupy less than 5 acres in the proposed ACEC. The Five Springs Falls campground, which lies within the proposed ACEC, also occupies less than 5 acres. The proposed plan would protect the entire 160 acres within an NSO restriction. We believe that this would adequately protect the campground and all known occurrences of rare plants in the proposed ACEC. For a comparison of the NSO restriction and no leasing, please see the response to comment 2 of this letter.

Please see the response to comment 2 of this letter. We do not expect that ventilation of cultural sites would increase or that any new roads would be built in the Little Mountain area as a result of mineral leasing or any other activity. The area has low potential for the occurrence of locatable minerals. Past leasing in the area has been for oil and gas, and records dating back to the early 1900s show that these leases have expired without having been drilled for oil or gas.

5. The BLM does not intend to add NSO restrictions to existing mineral leases, rather, NSO restrictions would be applied where appropriate on any new leases as existing leases expire. However, the BLM can modify proposed activities on existing leases on the basis of the results of site-specific environmental analyses or through negotiations with lessees.

7. Closure to new mining claim locations on Little Mountain would have no effect on the existing rights of mining claims that predate the closure. However, such closure would make it more feasible for mining claims to be found to be invalid according to the mining laws, they can be removed. Since all mining claims are considered valid until proven otherwise, the purpose for the closure to mineral location would be to prevent the staking of new mining claims in the area and to forestall the need for additional validity examinations.

8. ORV use in the proposed ACEC would be limited to designated roads and trails rather than existing roads and trails (please see map 13 and page 126 in the draft RMP/EIS).

9. Because of potential conflicts with bison development activities, the boundary of the proposed Sheep Mountain Anticline ACEC has been amended to exclude lands with potential for bison. Within the new boundaries of this proposed ACEC, there are mining claims on lands underlying Paleozoic age limestones and sandstones in the Phosphoria Formation, Pennsylvanian Sandstone, Amaiden Formation, and the Madison Limestone. There is evidence on Sheep Mountain of mining claim activity in these rocks and of a large-scale removal of mineral materials.

Some mining claim owners may wish to mine the limestones and sandstones for use as building stone or other construction materials. However, in most cases the mining laws do not allow the development and mining of these common variety materials in the proposed plan, all lands in the proposed ACEC (as now delineated) would be closed to future mineral entry by the establishment of a mineral withdrawal. This would include lands with potential for gypsum. The withdrawal would not affect any of the rights of holders of the existing mining claims. However, the BLM does conduct examinations of mining claim validity on building stone mining claims as described in the response to comment 7 of this letter.

10. Please see general response 3.
Response to Letter 5

1. Please see the response to comment 9 of letter 4.

Response to Letter 6

1. The wildlife mitigation requirements to protect wildlife habitat that were described in the draft RAMPEES were developed after an extensive evaluation of wildlife resources and the concerns of other agencies, especially the USFWS. In most cases, the BLM would evaluate a proposed action and determine when mitigation measures can or cannot be waived. We will always consult with the USFWS when a federally listed endangered, threatened, "proposed" or candidate species could be affected by a proposed action. The BLM also will practice coordination and consultation with other agencies as appropriate or necessary, but concurrence may or may not be possible.

2. When possible, the BLM intends to prevent the further loss of wetlands in the planning area and to implement actions to improve and restore native wetland plant and animal communities. Some surface disturbing activities such as fence construction may be necessary in wetland habitats to achieve our management goals. In addition, when considering proposed activities we must have the flexibility to allow surface disturbing in wetland habitats if adverse impacts could be avoided or if the activity and its associated mitigation would benefit our overall wetlands objectives.

3. In accordance with section 2801 of the BLM Manual, all power lines that are constructed or modified on public land will comply with the guidelines of the raptor research report you cited.

4. We are aware of the importance of prairie dog colonies. We manage these colonies under the Prairie Dog Ecosystem Habitat Management Plan (USD, BLM '8666). Prairie dog control would be carried out only if prairie dog damage was documented and control was determined to be necessary. Only two grazing allotments are currently identified for this practice. Such controls would be conducted in accordance with the HMP mentioned above and all biological control options would be tried before other options would be considered. The status of and effects on all sensitive species (for example, black-footed ferret, burrowing owl, swift fox) would be determined before such controls were implemented.
7.1

Title: The Cody Resource Area conducted an ecological site inventory in 1984 through 1986. The inventory covered approximately 61,000 acres, or 75% of the total planning area. During this time, 5,500 different range sites were visited to determine ecological condition classes that would be projected into a suggested stocking level for the preferred alternative.

The results of the samples indicated that the suggested production levels of the potential conditions could meet livestock produc-
tion capabilities associated with the Buffalo Basin. For example, the average production of the selected condition class was 188 pounds per acre. Most of the sites producing 50 to 85 pounds per acre, most of these sites producing 50 to 85 pounds per acre, and other sites producing over 85 pounds per acre. This represents only 14% of the potential production for the site, but it still represents a good condition on the basis of species diversity. Since the suggested stocking levels are based on the potential for these sites to produce 300 pounds per acre, the corresponding stocking levels for the condition classes of this range site and many others resulted in unsuitable proposals.

2. We believe production will change only slightly as condition class changes. There will be a "shift" from one species to another, but production would remain relatively constant, at least within the range of the condition class. However, during the monitoring phase, additional data will be collected to justify the stocking levels, which will be based on such additional factors as suitability, availability, average production, and management objectives.

3. As is explained in footnote 2 to table G-2 in the draft document, the column headed "Unsuitable" lists areas that are unsuitable for livestock grazing, such as rock outcrops, woodlands, and disturbed areas (for example, mines). Ecological condition class and suggested stocking rates for these areas are not identified in the technical range site guide of the Soil Conservation Service, U.S. Department of Agriculture (SCS). A revised table G-2 appears in the revised appendix G for this final document, and the heading has been changed from "Unsuitable" to "Unconditioned" because the term unsuitable may incorrectly imply a subjective approach to livestock grazing or other purposes.

A large amount of the inventory area is classed as unsuitable (unconditioned) because a large portion of the planning area is composed of the "badlands" soil type (number 102). Our inventory also focused on "1" category allotments, in which rock outcrops tend to occur more frequently than elsewhere in the planning area. Rock outcrop and bare parent material in the planning area is private ownership, and therefore was not included in the public land statistics displayed in the draft document. The rest of the public lands in the planning area will be inventoried as soon as possible.

4. Footnote 4 to table G-2, which has been revised for this final document. For allotment 2024, we have modified table G-2 by determining ecological condition based on the SCS range site guidelines for plant communities in precipitation zones of more than 20 inches annually. However, as noted on page 314 of the draft BLM/EP, baseline data collected during the ecological site inventory indicated need for further analysis of the spatial production capabilities and species composition of the range site in our planning area. These two factors are extremely important in the development of proposed stocking levels according to the "Supplemental Planning Guidance for Renewable Resources" in sections 1820 through 1822 of the BLM Manual. For this reason, we intend to initiate actions according to section 302-10 by which we establish management objectives for future range condition.

7.2

8

Title: Responses to Letter 7

1. The Cody Resource Area conducted an ecological site inventory in 1984 through 1986. The inventory covered approximately 61,000 acres, or 75% of the total planning area. During this time, 5,500 different range sites were visited to determine ecological condition classes that would be projected into a suggested stocking level for the preferred alternative.

The results of the samples indicated that the suggested production levels of the potential conditions could meet livestock production capabilities associated with the Buffalo Basin. For example, the average production of the selected condition class was 188 pounds per acre. Most of the sites producing 50 to 85 pounds per acre, most of these sites producing 50 to 85 pounds per acre, and other sites producing over 85 pounds per acre. This represents only 14% of the potential production for the site, but it still represents a good condition on the basis of species diversity. Since the suggested stocking levels are based on the potential for these sites to produce 300 pounds per acre, the corresponding stocking levels for the condition classes of this range site and many others resulted in unsuitable proposals.

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3. As is explained in footnote 2 to table G-2 in the draft document, the column headed "Unsuitable" lists areas that are unsuitable for livestock grazing, such as rock outcrops, woodlands, and disturbed areas (for example, mines). Ecological condition class and suggested stocking rates for these areas are not identified in the technical range site guide of the Soil Conservation Service, U.S. Department of Agriculture (SCS). A revised table G-2 appears in the revised appendix G for this final document, and the heading has been changed from "Unsuitable" to "Unconditioned" because the term unsuitable may incorrectly imply a subjective approach to livestock grazing or other purposes.

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8

Title: Responses to Letter 9

1. While "less than 1 percent" is shown on table 12 (page 181 of the draft BLM) for the riparian/wetland plant community, this means that less than 1% of the planning area that has been inventoried is occupied by this community. In fact, riparian and wetlands areas have been inventoried in 75% of the public lands in the planning area. Management type in the planning area is private ownership and therefore was not included in the public land statistics displayed in the draft document. The rest of the public lands in the planning area will be inventoried as soon as possible.

2. Appendix J in this document contains language about the need for management of rare and sensitive plant species. More detailed information about the type of species will be submitted in specific management plans.

We agree with the need for rare plant surveys and population monitoring in the planning area. A grant proposal to study rare plants in the Shoshone Canyon and Rattlesnake Mountain Palisades area is being analyzed for BLM funding. Livestock monitoring activities in the Carter Mountain proposed ACEC also will include rare and sensitive plant studies. Other options available to accomplish management needs could include monitoring and surveys conducted by interested volunteers or by organizations and agencies under a cooperative management agreement. These strategies will be incorporated into site-specific activity plans when the approved plan is being implemented.

3. The proposed plan includes specific objectives and management actions to provide for the protection of rare plant species in the Five Springs Falls and Carter Mountain proposed ACECs. No specific management actions relative to other rare or sensitive plant species in the Shoshone Canyon or Rattlesnake Mountain Palisades have been proposed. To date, we have not identified any potential for these plant populations to be affected. If future activities of any kind would have the potential to affect these populations, the
BLM would analyze the impacts and prescribe objectives and management actions to protect the rare plants.

4. Please see the response to comment 4 of letter 4.

Thank you for your offer of assistance. We will contact The Nature Conservancy when we plan interpretive signs and exhibits pertaining to rare plants.

5. Please see the response to comment 6 of letter 3 and the response to comment 3 of letter 4.

The Five Springs Falls proposed ACEC has not been actively grazed recently and would not be grazed in the future. Protective fencing and topography exclude livestock from the proposed ACEC.

The Carter Mountain proposed ACEC is open to grazing by livestock, but the area is not being grazed at present. If grazing should begin there again, the BLM would monitor and adjust this use as needed to protect the rare plants and alpine tundra.

The management actions on page 115 of the draft RMP/EIS indicate that interpretive signs would not be installed in the Carter Mountain proposed ACEC under the preferred alternative. We have reconsidered this and have modified the proposed plan to be the same as Alternative C, that is, interpretive signs would be installed. Please see the response to comment 4 of this letter.

Responses to Letter 10

1. Please see the response to comment 4 of letter 3.

2. We did not specify the same NSO restriction for all the alternatives because NEPA requires that "a range of alternatives" must be analyzed in an EIS. One alternative in this "range" is Alternative A, continuation of present management. Since we do not require NSO on the Bighorn River tracts at present, it would be incorrect to include such a restriction in our Alternative A.

The WFGD has designated crucial winter ranges in parts of the West Slope SRMA. That agency has not designated any of the proposed SRMA lands as parturition range, although adjacent lands managed by the Forest Service have been so designated. Under the proposed plan, seasonal restrictions would be placed on surface-disturbing activities in all areas designated crucial winter ranges throughout the planning area. This includes the crucial winter ranges in the proposed SRMA.

3. The mountain referred to as Carter Mountain is also known as Spirit Mountain. It lies immediately west of Cody and south of the Shoshone River. It is not identified by either name on any of the maps in the draft RMP/EIS, but its general location is in the area of Buffalo Bill State Park, which can be seen on the large folded maps in the back of the document.

We have not experienced problems due to ORV use in most of the planning area. An important aspect of our scoping process before this plan was developed was to determine areas of problems and conflicts on the public lands. As a result of information obtained during scoping, we identified certain areas where there are now ORV conflicts and areas where conflicts are likely to occur in the future. These are the areas where we propose to limit ORV use to designated roads and trails (see pages 40 and 41 of the draft RMP/EIS for a list of these areas). In the areas without identified problems or conflicts, the proposal is to limit ORV use to existing roads and trails. We will continue to monitor ORV use in these areas, and if problems with this use arise, we can change the designation to a more stringent one.

The proposed plan indicates that threatened or endangered species habitat would be subject to seasonal restrictions on ORV use. Additional seasonal restrictions could be applied as appropriate through site-specific activity plans that will be developed during implementation of the RMP. Also please see general response 1.

5. In areas where ORV use is limited to designated roads and trails, ORV use will not be permitted on some roads. This may create opportunities for "walk-in" areas. At this stage of planning we cannot identify specifically which roads will be closed to ORVs. When detailed ORV activity plans are developed, specific "walk-in" areas can be considered, including some in the West Slope SRMA. The development of activity plans will include opportunities for public involvement. Also please see general response 1.

6. Thank you for the comment. We will keep the coordination you suggest in mind as we develop interpretive signs and literature.
Responses to Letter 11

1. A correction has been entered in the "Additions and Corrections for Chapter 1" to indicate that planning criteria include protection of surface water and groundwater resources. The protection of ground-water recharge areas is included in the preferred alternative on page 45 of the draft RMP/EIS.

2. The proposed RMP has been modified to include protection of other important caves with NSO and "no surface disturbance" restrictions. Protection would be applied to other important caves and cave passages on Little Mountain, Sheep Mountain and Little Sheep Mountain, including Spence and Upper and Lower Kane Caves.

3. According to the final Bighorn Cavern Management Plan (USD, NPS, and Crow Tribe, n.d.), a cave management advisory group will be established to oversee cave management in the Bighorn Cavern-Horse Thief Cave area. Participation in the advisory group will include representatives from the Crow Tribe, the Bureau of Indian Affairs, the BLM, local grottos, the National Speleological Society, and the National Park Service. This group will be able to address the issue of multiple jurisdictions and help to develop any cooperative agreements that may be appropriate.

4. Appendix J in this final document contains supplemental information on all areas that were considered for ACEC designation, including the cave resources of Sheep Mountain. Also please see the response to comment 2 of this letter.

5. We agree with your comment. We have modified the text accordingly.

6. As we stated on pages 284 and 285 of the draft RMP/EIS, the list of agencies and organizations consulted is representative, not inclusive. However, we have added the National Speleological Society to the list in this document. We will continue to consult with your organization for future activities related to the Cody RMP.

Responses to Letter 12

1. With the passage of the Wild and Free Roaming Horse and Burro Act of 1971 (Public Law 92-195), Congress mandated that the BLM must establish wildlife management areas and manage the horses to maintain viable, healthy populations for public enjoyment. Wild horses inhabited the McCullough Peaks herd area before the act was passed. Under the proposed plan, the BLM would continue to maintain the horse population in this area at about 100 animals.

2. We appreciate your concern for the Whistle Creek, Coon Creek, and Sand Draw drainage. Through developing and implementing detailed activity plans, we hope to improve these areas as much as possible. Activity planning is described in general terms. Some work already has been initiated on two grazing allotments in these general areas. These are high priority "Y" improved category allotments slated for intensive management. The BLM is working with livestock permittees to develop RMPs to establish proper stocking rates, seasons of use, and class of livestock; and to resolve resource problems and conflicts, including livestock onacre. Future activity planning efforts for other resource management actions in these areas also would be aimed at improving their condition.

Responses to Letter 13

1. In summary tables 2.4, 2.5, and 6, management actions common to all alternatives and impacts common to all alternatives are the parts of Alternatives B, C, and D that are described as "Same as Alternative A." It should be understood that there is no direct correlation between management actions common to all alternatives and impacts common to all alternatives because the common actions must be analyzed along with the uncommon actions of each alternative, not separately.

2. We cannot justify the expense to redraft maps from the draft RMP/EIS unless they absolutely must be modified for the final EIS. Your suggestion will be considered for future efforts.

3. Appendix J in this final document contains supplemental information on all areas that were considered for ACEC designation, as well as a discussion of ACEC criteria.

4. The draft RMP/EIS glossary contains definitions of locatable, leaseable, and salable minerals. We have included a definition for communication on public window in the Glossary Supplement in this document.

5. Please see the definition of surface-disturbing activity in the Glossary Supplement of this document and the "Guidance" sections of appendix B, Wyoming BLM Standard Mitigation Guidelines. Please note that the basis for an NSO restriction is not simply certain types of activities; rather, the primary basis is what resources or resource values would be affected by any given activity, how important or sensitive the resource value is, and how much it would be affected. Thus, the need for an NSO restriction would vary with these factors as well as with geographic location.

6. The information that you request is readily available from various published and unpublished sources. Please see general response 2.

7. Thank you for the information concerning the responsibility and authority of the Corps of Engineers under the Clean Water Act.

The text contains a detailed discussion of various topics related to the management of wild horses, speleology, and wildlife resources. It addresses concerns raised in letters from various individuals and organizations, providing responses that detail changes made in the draft RMP/EIS and explanations for decisions made regarding the management of natural resources.
As a general rule, RMP/EISs do not contain detailed discussions about the responsibilities, authority, and jurisdiction of other agencies. It is assumed that all applicable laws and regulations would be complied with before the BLM could implement any proposed RMP action or authorize others to implement actions or to conduct activities on BLM-administered public lands.

Like any RMP/EIS, this RMP/EIS contains much information that is based on consultation between the BLM and other agencies. Such consultation is required by the regulations of the Council on Environmental Quality (CEQ) and numerous other laws. It is not appropriate for all the specific results of consultation and the roles of other agencies and governmental entities to be described or for all relative laws and regulations to be cited in the RMP/EIS. This type of detail is more appropriate for the unpublished management situation analysis for the planning effort, which is available at the Cody Resource Area office. This information also may be available in publications generally available at libraries or from appropriate government agencies. Also please see general responses 1 and 2.
Responses to Letter 17

1. The purpose of map 49 is to show the general locations of springs, reservoirs, and streams that BLM is proposing for intensive wetland/riparian habitat management. Because of the map scale, there may appear to be a large concentration of water sources in the area that you mentioned. However, the 12 reservoirs and 5 springs shown near Cutthroat Peaks are actually scattered over an area of about 46,000 acres.

More detailed maps of springs, reservoirs, and streams will be prepared for public review as they are developed.

The 100-foot surface disturbance restriction near water is one of the standard mitigation guidelines described in appendix B. Although the 50-foot setback is a "standard," it is a guideline, not a rigid requirement. It was developed to fit most, not all, situations. Before the BLM authorizes a proposed activity, a site-specific environmental analysis is required. In the analysis, resource conflicts and their environmental consequences would be determined, including the potential for spills and leaks near a water source. The findings of the analysis would determine whether site-specific restrictions or other requirements to prevent or mitigate spills and leaks should be included as conditions of the authorization.

Response to Letter 18

1. Our present aviation and fire suppression programs include consideration of all existing low-level military flight training routes. We do not anticipate any changes resulting from the Cody RMP that would affect military training flights.
The AsregardS maging native anagement will alleviate mos t of the publ ic percept ion potential for the occurrence of minerals. We believe that this does not mean that the BlM would be the requirement that the Billings Register Objectives Orders would place on the riparian plan. However, we agree that the BlM is to protect important land and resource standard mitigation measures. Also please see general response 4.

The Anticline meets the same importance criteria as conditions necessary for mining development. The BlM has not only to leasable minerals. However, we refer to the determination of the BlM to Mining Claim location. We believe we have already included all mining within the Anticline. The Anticline meets the same importance criteria as conditions necessary for mining development. We believe we have already included all mining within the Anticline. We believe that the BlM is to protect important land and resource standard mitigation measures. Also please see general response 4.
standard mitigation guidelines can be applied to mining claim activities to protect any resource value. Such application can be based on negotiations between claim operators, the BLM, and the Wyoming DEQ. The BLM will continue to make use of these opportunities for negotiation.

Concerning mining law rights, please see general response 1.

5. The requirements and provisions for filing notices and plans of operations under federal regulations 43 CFR 3809 or the BLM/DEQ agreement are not subject to modification by anything contained in this RMP/EIS. Therefore, standard requirements and provisions established by regulation and the cooperative agreement are not discussed in this plan. Also please see general response 1.

6. Please see general response 1.

7. We agree with your comment concerning the economic importance of bentonite mining in the eastern part of the planning area. Accordingly, we have added new information to the "Eco-economics" section in chapter 4 of this document.

With the boundaries of the Sheep Mountain Anticline proposed ACEC modified as described in this document, we do not anticipate an economic effect on local bentonite mining operations.

8. The Class 1 VRM management you mentioned was proposed under Alternative C in the draft RMP/EIS; however, the preferred alternative was Alternative D, under which the VRM management was proposed to be Class II. This is the VRM management included in the proposed plan.

9. A 30-day protest period will begin upon publication of this proposed RMP/EIS. During that time, any person who participated in the planning process and could be adversely affected by the plan may protest. (The protest procedure is described in the "Dear Reader" letter in the front of this document.) A previous opportunity for public comment was available during the 90-day review and comment period that began in April following publication of the draft RMP/EIS. The results of that public review and comment period are attached to which your letter is a part—have been fully integrated into this document.

Response to Letter 21
1. Thank you for commending two members of our Cody Resource Area staff. As we have indicated in this document, we intend to implement both the plan for management of peregrine falcon recovery habitat and the plan for management of wetlands habitat.

2. Thank you for pointing out the discrepancy. We have worked the section about black-footed ferret habitat in the proposed plan in this document to be consistent with the biological assessment. Also please see the response to comment 4 of letter 4.

3. Thank you for the information. We have modified the language of the proposed plan accordingly.

4. Please see the response to comment 2 of letter 11.

5. Cymopterus is a new species of Cymopterus. This information was obtained from Hartman and Kerkpatrick (1988).

Table 14 was intended to display not only listed or candidate plant species but also any species that may require other special management consideration (see the last paragraph on page 192 of the draft RMP/EIS). One of the species in this latter category is Stanleys soman-
The management objective for the Carter Mountain area is to protect unique alpine tundra and rare plants. On the basis of available information, we believe that to accomplish this objective it will be necessary to prohibit surface-disturbing activities on slopes of more than 7%. All drilling operations and other proposed surface-disturbing activities will be evaluated individually, as you have suggested, and depending on site-specific conditions, it may be possible to mitigate adverse effects on vegetation for slopes of more than 7%. In such a case, an exception to the restriction could be made. Conversely, unacceptable effects on vegetation could occur on slopes of less than 7%. If so, the proposed action would be denied, or effects could be mitigated by moving the location of the proposed activity.

The 7% slope restriction will be evaluated continually, and the plan will be updated as appropriate on the basis of information such as that obtained from reclamation at Marathon's Gold Reef well. To date, the Forest Service indicates that reclamation in the Gold Reef area is promising but inconclusive because of the relatively short time that has elapsed since disturbances occurred.

In the discussions on pages 144 and 220-221 of the draft RMP/EIS, it was assumed that produced water would decline because of increased water injection and that wells would be shut in or abandoned as fields became depleted over time. We agree that the ratio of water to oil can increase with secondary and tertiary recovery, but when the ratio becomes too high, the well is abandoned as uneconomic. Unless the well is then converted to a water well, its production of water ceases at that point.

Thank you for the information. We are aware that oil and gas exploration and development can result in the discovery of cultural resources (see page 166 of the draft RMP/EIS). Support inventories of the black-footed ferret and other threatened and endangered species, provide access, and create wetlands (see page 207 of the draft RMP/EIS).
Response to Letter 23

1. Please see general response 3, appendix J, and the new map 1 in this document for discussion and recommendations relative to the National Wild and Scenic Rivers System.

23.2

River users to be eligible for inclusion in the national river system. In the past, however, interest and/or a representative 51A, and all river users should be included in the NPS process.

The preliminary investigations of a number of Bureau NPS applications that potential opposition to the NPS and Bureau public venues are being largely ignored in the planning process. In general, these investigations are not being used to large due to insufficient administrative direction regarding the NPS' potential opposition to potential river users' and potential venues in the planning process. No written position papers have been in form for the validation of such requests.

In a memorandum dated July 29, 1977, however, the Director of the NPS stated that the number of investigations, opposition, and potential of potential river users and potential venues on public lands. Thus, such a memorandum reflects the recommendations of the NPS under the Wild and Scenic Rivers Act. It is shared from the 1977 report, "NPS' Consideration of Proposed River Venues, and in particular to the decision and emphasis by the U.S. Forest Service and the Bureau of Land Management. Thus, the final draft decision is not final, and therefore it is mandatory to send a copy of the Memorandum to other responsible agency in the validation of such requests.

The NPS and Bureau users are specifically the recommendations for river users to be eligible for inclusion in the national river system. It is not clear what is "appropriate" or if the river users are under such recommendation.

23.3

Also, membership roles, including river, recreation, guidelines, fish, wildlife, water, recreation, or other similar activities. U.S.C. sections 1471, and 1472. Given various and these documented recommendations are eligible for consideration as potential river venues to the national river system.

The study process as outlined in the "NPS' Consideration of Proposed River Venues, and the Director's draft decision, for the exclusion of potential river users and potential venues and to make up a single river user process.

1. "AGGREGATION" -eligibility determination made to mark for all river users per aggregate identified for further study. These eligibility determinations made to mark interesting the statutory procedures described in the "NPS' Consideration of Proposed River Venues, and the Director's draft decision, for the exclusion of potential river users and potential venues and to make up a single river user process.

2. "AGGREGATION" -eligibility determination made to mark for all river users per aggregate identified for further study. These eligibility determinations made to mark interesting the statutory procedures described in the "NPS' Consideration of Proposed River Venues, and the Director's draft decision, for the exclusion of potential river users and potential venues and to make up a single river user process.

In addition, sufficient of a river can be sighted through submitted by a member of river users in the study. Likewise, there is an excessive process for respondents for the inclusion. The inclusion here now from are written some of these users to represent the statistically appropriate sample for which the
23.4

river would be designated. Thus, "outstandingly remarkable" scenic, botanic, wildlife, wilderness, geologic, historic, and other resource values may all exist within a river corridor regardless of stream flow levels.

2) CLASSIFICATION - all segments found to meet the eligibility criteria for potential inclusion in the national system should be classified according to the NRRA/DESI Guidelines as potential Wild, Scenic, or Recreational Rivers. The potential classification of a river segment is important because, once found eligible, the BLM must provide interim protection for eligible segments up to the level of their potential classification. Here again, segmentation of the eligible rivers is pertinent.

3) SUITABILITY ANALYSIS - a river's suitability for inclusion involves a recommendation by the BLM regarding the proposed future of eligible and classified river segments. A segment may be recommended for inclusion in the national system, or may be recommended for other uses if appropriate to a river's resources. Suitability determinations are based on a river's resource values and other practical considerations.

A number of rivers with potential eligibility for inclusion in the national rivers system flow across lands of the Cody Resource Management Area. These rivers include: the Clark's Fork of the Yellowstone; the Greybull; the Shoshone and its forks; the Big Horn; and Dry Creek.

23.5

Unfortunately, the Draft Cody plan does not address these or any other rivers as potential additions to the national rivers system. There is little doubt that these rivers, or portions of them, are of outstanding quality and should be evaluated. We believe, therefore, in view of the draft direction for rivers planning and protection contained in the Director's July 23, 1987 memo, and the general requirements of the Wild and Scenic River Act and the interagency guidelines that, at minimum, eligibility evaluations of rivers within the Cody planning area should be conducted. We respectfully request the evaluation of the above mentioned rivers, as well as other rivers in the Cody planning area, for their potential eligibility for inclusion in the national rivers system. We also ask that any rivers found eligible for inclusion be given interim protection in accordance with their classification - wild, scenic, or recreational - until such time as detailed suitability studies can be completed.

If you should have any questions please contact me or Kevin Copley of this office, or Robert Treher of the Sierra Club Legal Defense Fund. Mr. Treher's number is (202) 657-4600.

Sincerely,

James Furstroh
Public Lands Specialist
Response to Letter 24

1. Please see general responses 3, 4, and 5.

Response to Letter 25

1. Please see general response 5.
Response to Letter 26

1. Thank you for your comment.

Response to Letter 27

1. Please see general response 5.
Response to Letter 28

1. Please see general responses 3 and 5.
Group Response to Letters 30 through 36

The concerns in those letters have been addressed in general responses 3, 4, and 5.
Group Response to Letters 38 through 40

The concerns in these letters have been addressed in general responses 3, 4, and 5.

Robert D. Butler

December 1, 1990

Dear Mr. Beck,

I am writing in response to the Draft Field Resource Management Plan. We have considered the comments you have made, and I believe we have responded to most of your concerns.

Sincerely,
Robert D. Butler
Responses to Letter 41

1. Please see general response 6.

2. We do not agree that nongame species have not been adequately addressed in the draft RMP/EIS. We have proposed (a) the management of six areas for peregrine falcon recovery and the reintroduction of peregrine falcons to the planning area, (b) special management restrictions to protect bald eagle nests and the protection of all suitable river habitat for bald eagle recovery, (c) special management restrictions in the black-footed ferret essential habitat area and in other high potential habitats. In addition, special consideration has been given to ferret recovery and protection throughout the planning area. The proposed plan also includes designation of the Chap­man Bench ACEC to protect mountain plover nesting habitat and measures to protect the nesting, feeding and concentration habitats of Swainson’s hawks and other raptor species.

A total of 455 terrestrial vertebrate wildlife species potentially inhabit the planning area, and 384 species have been documented to be present in the planning area. We examined the status and habitat requirements of 117 of those species in detail during development of the RMP/EIS. Those studied were all federally listed endangered, threatened, proposed and candidate species, species receiving federal emphasis, and those the state of Wyoming considers “species in need of special management,” as well as Wyoming protected mammals and nongame, game, trophy, predator and fur bearer species. In addition, all wildlife habitats and communities in the planning area were evaluated and special management restrictions were proposed to protect high value wildlife habitats for all wildlife species.

Archeological resources in the planning area are described on pages 161 through 167 of the draft RMP/EIS. Several important historical features are identified on map 37, page 284 in the draft. Management actions that would be used to protect cultural and historic resources, including historic trails, are described on pages 9, 10, 29, 31, 40, 42, 112, 116, 121, 125, 130, 295, and 299-301. Also please see general responses 3 and 5.
Group Response to Letters 42 through 55

The concerns in these letters have been addressed in general responses 3, 4, and 5.
June 28, 1968

Mr. Bean,

I understand you are concerned about the education of our children and the need for school facilities. I am pleased to inform you that the Board of Education has approved the construction of a new elementary school in your district.

Sincerely,

[Signature]

John Smith
Superintendent of Schools

June 29, 1968

Mr. Bean,

I am pleased to inform you that the new elementary school is under construction and will be completed by the end of the year. We are making every effort to ensure that the facility meets the needs of our students.

Sincerely,

[Signature]

John Smith
Superintendent of Schools
1. The NSO lands that would be closed to geophysical exploration are shown on map 35 of the draft RMP/EIS. As you have indicated, these lands do not include the areas affected by "no surface use or activity" restrictions. We agree that some geophysical operations could be conducted without impact to the surface. For this reason, we have modified the plan to allow casual use geophysical exploration on NSO lands. Casual use is defined in 43 CFR 3045.5(c).

2. An oil and gas field reclamation plan is a comprehensive plan developed in cooperation between the BLM and the operator. Its purpose is not to require off-site mitigation or to impose intensive and additional mitigation measures on existing leases; rather, the plan is intended to provide for orderly development, reclamation and abandonment in oil and gas fields. For example, such a plan might be developed to devise and implement a systematic or sequential method for abandonment rather than to reclaim an entire field at one time. There are many oil and gas fields in the Cody planning area that have been in operation since the early 1900s and are at least secondary phases of oil recovery. In those fields, some thought about ultimate abandonment might be a timely consideration.

Reclamation plans would provide for the orderly reclamation and abandonment of facilities in old fields that are no longer needed for production. In other fields, such a plan could emphasize development of facilities to minimize the effects of necessary disturbances, as well as streamlining the BLM's review of proposed rights-of-way and sundry notices. By considering development and reclamation needs in advance, environmental reviews of proposed actions could be used to consider groups of facilities rather than a single facility at a time.

Where individual facilities are analyzed, an overall environmental review of the field in the reclamation plan would expedite site-specific environmental reviews. In all fields, future oil and gas development and reclamation needs would be considered in relation to anticipated conflicts with other resources and land uses. Orderly field
development and reclamation would help to avoid many of these conflicts altogether.

Although these goals may sound ambitious, we anticipate that reclamation plans will vary greatly in the mandates and philosophy of the BLM. These plans may be prepared primarily by the BLM and may include all the features described above, or they may consist of a combination of plans already prepared by oil and gas operators. In all cases, however, the plans must comply with these requirements.

3. We agree that most of the 10,000 acres of disturbance have been reclaimed. Our purpose in describing the 2,272 wells drilled in the planning area to discuss disturbance, however, would have included a correction in the "Additions and Corrections for Chapter 2" to remove the reference to surface disturbance.

4. There seems to be some confusion about the term "produced water." As used in the document, "produced water" is water produced with oil. It is usually disposed of by reinjection, discharged to complete containment ponds or, after treatment for removal of oil, discharged to surface water. "Acquired oil and gas wells that produce water" refers to an abandoned oil and gas well or exploratory well that is developed or converted into a water well. See "Water Well Conversion Criteria" in Appendix I of the draft RMP/EIS.

5. Please see the response to comment 1 of letter 22.

6. At present, disturbed lands in the Cheyenne Bench proposed ACEC occupy less than 0.1% of the total land surface in the proposed ACEC. None of these disturbances are related to oil and gas exploration and development.

7. Numerous published studies and our own observations in the planning area have shown that the application of seasonal restrictions within 2 miles of the strutting ground are necessary to protect local grouse populations. This restriction has been in place in Wyoming since 1981 without significantly affecting oil and gas development. We do not agree that a 1/2-mile buffer would be adequate.

The strutting ground serves as a center of yearling activity for the resident grouse population, and of the 300 oil and gas wells on the 88-sage grouse lease, any proponent of an ACEC would have to determine if any of these wells were actually located within the 1/2-mile buffer zone proposed in the draft RMP/EIS.

8. We agree that the Buffaloberry and Cody BLM offices have been advised of the potential for oil and gas operators to provide water to the ACEC in the event of drought.

9. We agree that the Middle North and Cody BLM offices have been advised of the potential for oil and gas operators to provide water to the ACEC in the event of drought.

10. The Endangered Species Act of 1973, as amended, requires that the BLM promote the conservation and recovery of federally listed species and to ensure that no federal action (including the authorization of oil and gas activity) will adversely affect a federally listed species or its habitat. We have determined that the steps outlined in the draft RMP/EIS would comply with these requirements. High, moderate, and low value black-footed ferret habitat areas correspond to Class I, II, and III, respectively. Source colonies differ from Class I colonies (essential black-footed ferret habitat) in that Class I colonies have been known to have been occupied by black-footed ferrets.

11. The restrictions proposed for big game winter habitat and caressing areas are seasonal limitations on surface-disturbing activities. flat that no "surface disturbance" restrictions, in addition, concerns about winter range and caressing area concerns will be addressed individually for proposed surface-disturbing activities when big game animals are not on these habitat areas and would not be affected by human presence disturbances, then exceptions to seasonal restrictions could be made after consultation with WGF.

12. Chapter 4 of this final document contains a complete summary of environmental consequences for the proposed plan.

We appreciate your concern. We believe chapter 4 of this final document contains a better description of potential economic effects associated with directional drilling.

Responses to Letter 57

1. Surface resources would be adequately protected through site-specific evaluations of sites of incident and the use of the Wyoming Local muffin guidelines for surface-disturbing activities. The requirement to make geographic exploration subject to OIL documents has been removed from the proposed RMP/EIS.

2. Please see the response to comment 1 of letter 56.

3. Please see the response to comment 7 of letter 56.

4. The 1/2-mile or visual horizon limitation is not a new concept for historic trails. It has been a standard of oil and gas companies for a number of years, and it has also been applied to other surface-disturbing activities. The visual of the restrictions to maintain visual and physical qualities in the immediate vicinity of the significant portion of the ACEC would not apply to use of existing disturbed areas or to activities that would be considered "casual use.

Operations such as hand placement of surface equipment and other operations that do not disturb the surface would be available, and the criteria for these activities are not available, permissible crossings of the trails may be authorized. Generally, sufficient areas of existing ground disturbance are present to allow crossings that do not affect historic trail remains.

5. We agree that communication with the public about proposed wildnis operations will help to alleviate public concerns. However, the proposed RMP/EIS would still restrict geophysical exploration to casual use activities on recreation lands subject to NSO restrictions. These restrictions would include the "special management areas" described on pages 11 and 12 of the draft RMP/EIS. Also please see the response to comment 1 of letter 56.
Responses to Letter 58

1. Please see the response to comment 1 of letter 56.
2. Please see the response to comment 1 of letter 56.
3. The “Additions and Correction for the Appendices” contain further discussion concerning hazardous materials.
4. Please see the response to comment 3 of letter 56.
5. The proposed plan suggests that off-site mitigation could be used in sage-grouse habitat areas and in the Chapman Bench proposed ACEC if it appeared that certain thresholds would be reached for total unreeled surface disturbances. These thresholds would be 10% for sage-grouse habitat areas (101 acres within 2 miles of a sage-grouse lek) and 5% (770 acres) for the Chapman Bench proposed ACEC. Off-site mitigation would not be required unless it would be the only means remaining to meet management objectives for limiting surface disturbance. Management would emphasize early identification of potential conflicts so that appropriate mitigation measures could be implemented before thresholds were reached. For so far, it appears that the 10% threshold could be reached in two of 88 sage-grouse habitat areas in the planning area, and on the basis of projections of future activities it appears unlikely that the 5% threshold would be reached in the Chapman Bench proposed ACEC. For these reasons, we believe that off-site mitigation would be applied rarely and in limited circumstances.
6. Please see the response to comment 7 of letter 56.

Responses to Letter 59

1. The summaries of alternatives to which you refer (pages 1 and 7 in the draft RMP/EIS) are brief and general. The management actions for fish and wildlife habitat would not be simply a continuation of current management practices. All programs and activities discussed in the document include management actions that would benefit habitat. Some such actions are restrictions on surface-disturbing activities and the management actions for watershed, livestock grazing, lands and realty, and minerals.
2. Some surface-disturbing activities may lead to contamination of groundwater, given the right set of circumstances. These activities would be limited both in time and space and therefore were not discussed at this level of the planning process. Every management action the BLM permits (such as reservoir construction and oil and gas exploration) is preceded by a site-specific environmental analysis, during which the potential for groundwater impacts and the need for mitigation requirements would be addressed.
3. We did not intend to imply there was an interagency agreement. The reference was to separate water quality plans of the agencies named.
4. Please see general response 1 regarding activity planning.
5. The 8,300 acres cited in Alternative C are wetland riparian habitat and potential habitat areas that could be improved or created. (The habitat that could be created is associated primarily with ephemeral and intermittent streams.) The number of riparian zones along the stream reaches listed on page 323 have not yet been determined.
6. It should not be assumed that tradeoffs are necessary to accomplish the objectives for management of riparian zones. In many cases, the increased forage production for livestock would occur on upland sites. This would help to accomplish riparian zone management objectives by attracting livestock away from riparian zones.
7. The best management practices referred to in the RMP are those that have been or will be developed by the Wyoming DEQ.
59.2

The determination of environmental impacts for specific activities will be conducted in accordance with the Water Quality Standards for the State of Wyoming and the Environmental Protection Agency. The determination of environmental impacts for specific activities will be conducted in accordance with the Water Quality Standards for the State of Wyoming and the Environmental Protection Agency.

59.3

Many of the detailed comments deal with water quality and water use issues. These are addressed in the following sections:

a. Water quality standards and water use issues
b. Management and coordination issues
c. Environmental and public health issues

59.4

As the water is the one area of the draft SMP that has the potential to significantly affect the use and availability of water resources, it is important to address the issues of water quality and water use in the draft SMP.

59.5

The determination of environmental impacts for specific activities will be conducted in accordance with the Water Quality Standards for the State of Wyoming and the Environmental Protection Agency.

8. Please see general response 1.

9. The protection of wetlands would be improved (compared to existing management under the proposed action because the use of ORVs would be limited to designated vehicle management areas and to wetland priority areas, and ORVs were not to be used by the preferred alternative.

10. The title for map 17 in the draft RMP/EIS was in error; it should have said: "Alternative C and D."

The 500-foot setbacks apply to all surface water and/or riparian areas. You may assume that all habitat areas shown on map 49 and any wetland/riparian areas not shown would be protected by the setback.

11. The per-acre figure for annual soil loss is an estimated average based on total annual tonnage and total area. The loss figures for individual areas will depend on the type and intensity of impacts in each area. It is beyond the scope of this analysis to project total losses per acre for each area. The per-acre loss for a given area may be very high relative to the loss tolerance if, for example, there is erosion or sedimentation, or it may be very low if the effects are primarily due to moderate levels of grazing.

12. We expect some degree of improvement in all "I" and "M" category allotments. Many practices are implemented in both categories that would improve the condition of the setting. In addition, some improvement may occur that will result in a change in ecological condition. For example, many lands in "poor" condition would be improved to "good," but the "medium" class would not be improved to the "good" class. We are conducting some work in this area to determine the effects of various management practices on the same ecological condition class. Improved vegetative quality also will benefit soil stability, water quality, and wildlife habitat.

13. We estimate that the range condition will be improved by at least one condition class on approximately 78,000 acres (25% of the part of the planning area that has been inventoried). The existing condition would be at least maintained (that is, no change or slight improvement) on 25% more. We consider this a relatively significant improvement from the existing vegetative condition and trend.

14. The determination of "no adverse effects" on water resources and related resources in the proposed AECs was made on the basis of anticipated levels of surface-disruptive activities and other land use activities projected for the next 10 to 20 years.

15. Pages 185 through 192 of the draft RMP/EIS are in chapter 3, "The Affected Environment" of the draft. Impacts are discussed in chapter 4, "Environmental Consequences."

16. The BLM does not function as a water data collection agency, although it does occasionally conduct level II water quality monitoring consisting of periodic grab samples. The level of monitoring is insufficient to make judgments about water quality standards for compliance. In Wyoming, water quality standards are based on Class III water quality criteria. The BLMs involvement is restricted to point and nonpoint source pollution.

17. The determination of environmental impacts for groundwater resources, requested by the EPA is beyond the scope of this RMP. The same is true for documentation of geomorphologic information. Before the BLM would authorize any surface-disruptive activity, site-specific environmental analyses would be conducted to determine how groundwater and geohydrologic conditions would be considered as appropriate.
Response to Letter 60
1. Thank you for commenting. Please see general responses 3 and 5.

Response to Letter 61
1. Thank you for commenting.

Group Response to Letters 62 through 67
The concerns in these letters have been addressed in general responses 3, 4, and 5.
Responses to Letter 68

1. Please see the response to comment 2 of letter 4 and general response 5.

2. The CEO wrote a memorandum to "federal, state, and local officials and other persons involved in the NEPA process" that was dated June 16, 1981, on the subject of "Questions and Answers about the NEPA Regulations." In that memorandum it is pointed out that there is a "two distinct interpretations of what "no action" alternative should be." The CEO memo says that the first situation might involve an action such as updating a land management plan where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases "no action" is not the "no change from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed.

3. The interpretation of the "no action" alternative that is used in BLM planning documents. The CEO memo goes on to say that another interpretation of the "no action" alternative is "in instances involving federal decisions on projects for which "no action" would mean "the project would take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative to go forward.

While NEPA requires consideration of a range of alternatives, it also requires that the alternatives be reasonable. The suggestions you offered were considered during development of the draft RMP/EIS and were determined to be unrealistic and unreasonable.

4. We believe it is appropriate for the RMP/EIS to contain some elements of management that are common to all alternatives. For example, the management of hazardous materials and wastes is a difference that could be considered in the preferred alternative. The alternative processes (active federal, state, and local cooperation) that were considered were those that would be somewhere between these levels.

5. We do not propose to harvest all the remaining tree cover on Rattlesnake Mountain. We are in the process of revising the present management plan for that area. The revised plan will be known as the Rattlesnake Mountain Forest/Heritage Management Plan and include detailed site-specific activity level planning that follows the RMP.
Detailed activity level plans will be developed during implementation of the RMP. Those plans will include consideration of such things as road and trail closures and enforcement of ORV designations. Seasonal closures such as the one you recommend for the Carter Mountain area would be considered in activity planning level plans. Any seasonal closures would be reevaluated each year. Also please see the response to comment 10 of letter 5.

The management of wetlands systems is one of the highest priorities for funding within the BLM wildlife program. Efforts to maintain or restore wetlands in the Cody Resource Area would not be confined to "T" category allotments. Details of the wetlands management program in the Cody Resource Area will be presented in the forthcoming draft wetlands HMP, which the BLM is preparing in cooperation with the WGFD.

The methods of sagebrush control that may be used within 500 feet of water are not indicated. They would be determined individually during activity planning for each site. This activity planning would include environmental analyses and appropriate public involvement. Spraying is only one option of several that may be considered, and different methods of spraying also would be considered. Also please see the response to comment 15 of this letter.

The WGFD herd unit data presented in the draft RMP/EIS (1984 data) were the most current population and trend data available when we began the planning effort in 1986. Since it is necessary to use consistent data in the evaluation process, the 1987 figures would not accurately reflect population projections (percent change) that are based on 1984 data. Use of the 1984 population estimates is of no significant concern, because we are dealing more with population trends than with population numbers.

The BLM recognizes the importance of big game seasonal ranges and, with help from the WGFD, has tried to provide adequate protection. In addition, 1987 WGFD herd data indicate that 20 of the 27 herd units in the planning area are at or above WGFD population objectives, and 3 others are increasing toward objective levels. (Data on pronghorns are not included.) Considering these factors, our analysis does not support the need for such higher levels of protection as you suggest. The draft RMP/EIS statement: "...separate parturition areas have not been delineated for species other than elk", is correct according to the data provided by WGFD Game District 2. Game District 2 updated this information in July 1986 specifically so that the BLM would have current seasonal range information for the RMP/EIS. Also please see general response 4, the response to comment 12 of this letter, and appendix J of this document.

21. Please see the response to comment 4 of letter 6 and comment 2 of letter 21.

22. Please see the response to comment 17 of this letter and the response to comment 6 of letter 9.

On the basis of our analysis of potential effects in the Chapman bench proposed ACEC, a seasonal closure to livestock grazing does not appear necessary at present. Seasonal closures could be required in the future if our monitoring of nesting ranges and products of water birds indicate the need for the restriction. We do not believe that ORV use on designated roads and trails would present a problem to the birds. If ORV traffic becomes a problem, we would do whatever is necessary to protect the nesting habitat.

24. Please see the response to comment 4 of letter 4.

25. As you have indicated, there is very little interest in extracting for oil and gas on Little Mountain. However, we believe drilling could be done without adverse effects on cave resources because intensive mitigation, including NSO restrictions above important caves would be practiced. Also please see the response to comment 5 of letter 4.

Designation of an ACEC because of hazards is explained in detail in appendix J to this document. Also please see general response 4.

26. Please see the response to comment 9 of letter 4.
The Wyoming BLM does have some administrative responsibilities for leasing of minerals on lands administered by the Forest Service. However, minerals leasing and surface protection requirements on Forest Service lands near the Cody planning area are discussed in land use plans for the Shoshone and Bighorn national forests. The Cody RMP/EIS does not consider Forest Service lands.

Responses to Letter 69

1. Please see general response 4 and 5.

2. The Wyoming BLM does have some administrative responsibilities for leasing of minerals on lands administered by the Forest Service. However, minerals leasing and surface protection requirements on Forest Service lands near the Cody planning area are discussed in land use plans for the Shoshone and Bighorn national forests. The Cody RMP/EIS does not consider Forest Service lands.

Reasonable "scenarios" of future oil and gas exploration and development and other surface-disturbing activities have been developed and analyzed for the Cody planning area. Projected levels of surface-disturbing activities associated with oil and gas, coal, and geothermal leasing; geophysical exploration; the development of rights-of-way; and the development of saline and locatable minerals are summarized on pages 23, 29, 36, and 37 through 39 of the draft RMP/EIS. Information relating to anticipated surface disturbances in smaller portions of the planning area is available in the Management Situation Analysis, which is available at the Cody Resource Area office. Please also see appendix K of this document.

We do not agree that planning decisions, such as whether or not to lease, must be made on the basis of site-specific information derived from an assessment of potential impacts. Assessments of potential impacts and planning decisions at the RMP planning stage are made on the best available information but are not necessarily based on site-specific information. Site-specific information is evaluated in detailed environmental analysis that are conducted in response to individual proposals for surface-disturbing activities. The majority of oil and gas leases expire before any drilling is done, and exploratory wells are abandoned as dry holes. For these reasons, detailed site-specific evaluations of a single well, or evaluation of the cumulative effects of an entire field, would be extremely speculative at the leasing stage.

3. Please see general response 4.

4. Please see the response to comment 4 of letter 3.

5. Protection of fragile soils and avoidance of landslides would be addressed in site-specific environmental analyses conducted in response to proposed timber harvest activities.

6. Stream channels would improve as other wetland/riparian areas improve as described in the forthcoming wetlands RMP. In this document, and in the draft RMP/EIS. Proposed methods to improve these aquatic systems are discussed on pages 10, 26, 32, 47-49, 119, 298, 407, and 341 of the draft RMP/EIS.

7. Please see general response 6.

8. Please see response 16 to letter 68 regarding a "no leasing" alternative.

It would not have been reasonable to remove most surface protection requirements to provide a false perception of a greater range of alternatives. In other words, it is not reasonable or prudent to analyze an assumption that necessary and legally required protection measures would not be applied. We believe the requirement is for an "adequate and reasonable" range of alternatives and that such a range has been provided.
69.3

The Town’s only approval for the development of these sites was for the construction of a new water treatment plant. The Town has since been approached by a number of developers who wish to purchase the land for commercial or industrial use. The Town is currently negotiating with these developers to determine the terms and conditions of the sale. The negotiations are ongoing and have not yet reached a conclusion.

69.4

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69.5

Surface Features

4

Under the Plan, surface disruption activities would be
lessened over the course of the next five years. The Plan includes a phased approach to surface disruption, with each phase
comprising a series of smaller projects. The Plan also includes provisions for the temporary relocation of facilities
and equipment during the construction phase.

5

The Plan includes a phased approach to surface disruption, with each phase comprising a series of smaller projects. The Plan also includes provisions for the temporary relocation of facilities and equipment during the construction phase.

6

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7

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8

The Plan includes a phased approach to surface disruption, with each phase comprising a series of smaller projects. The Plan also includes provisions for the temporary relocation of facilities and equipment during the construction phase.

69.6

Preparation

The preparation of the material impact map for the next
planning cycle is a priority for the Town. The Plan includes the development of an initial plan for the next cycle, incorporating the results of the current cycle and considering the feedback from stakeholders. The Plan also includes provisions for the temporary relocation of facilities and equipment during the construction phase.

Appendix

The Plan includes a phased approach to surface disruption, with each phase comprising a series of smaller projects. The Plan also includes provisions for the temporary relocation of facilities and equipment during the construction phase.
Responses to Letter 70

1. The elimination of any form of multiple use from a parcel of public land is certainly viewed as a serious action by the BLM. Should any need to reduce or eliminate grazing "in any part of the planning area be identified, the affected permits and any appropriate parties would be notified in accordance with 43 CFR 1140.3-3 (b).

2. Pages 34 and 35 of the draft RMP/EIS represent the requirements of the EIS statement of process that the BLM must complete in "connection and alternatives be considered. As we said, the preferred alternative to retain existing grazing is "Other" and if it is found that stock driveways are not longer serving the purpose for which they were established or whether sufficient increases in Upon application with the Worland District Grazing Advisory Board, may propose to revoke stock driveways. However, the areas in question refer to the trail that is occurring outside designated stock driveways to accommodate existing needs to move livestock.

3. The percentages, shown in table 12, represent the final ecological condition classes derived from analyzing the field data collected during the ecological site inventory. The condition classes considered both species composition and total annual production associated with field estimates of community. All field data are available for review in the Cody Resource Area office.

4. The discussion on pages 178 through 179 of the draft RMP/EIS describes the method of estimating "natural erosion." The discussion on page 227, column 2 describes our position on that grazing, because of the dry weather in the planning area, that is an estimated 75% of the total accelerated erosion. By definition, "accelerated erosion" is human-caused or induced.

5. Our figures result from a combination of field data collected in the planning area in the 1950s, erosion measurement methodologies applied in 1966, literature sources of data for European, and an evaluation formula similar to that used for the Grass Creek grazing EIS (USDI, 1980).

6. Stream habitat conditions were classified according to "Condition Classes for Streambanks and Shorelines" in the "Classification of the Federal Register of February 5, 1980, volume 45, pages 109-110. In general, the classification refers to what is preferred and "over all" viewpoint consistent with multiple use possible for multiple use, and the natural resources, for example, "good" condition is preferred because of the benefit it provides for all resource concerns, including wildlife habitat and livestock grazing forage.

7. The narrative referred to is a part of the description of the "Affected Environment." As such, our intent is to provide one example of a riparian vegetation technique, other than open free-choice grazing, that has been utilized to date in the planning area. A discussion as suggested appears in appendix G, table G-3, which is reprinted in this final document. It is our understanding does not necessarily mean that livestock would be eliminated. Rather, the intention is to control the amount of grazing pressure within the riparian areas.

8. The paragraph you mentioned is misleading. The BLM has management authority over wetlands. The "good" vegetation in table G-3, which is reprinted in this final document, is not of the description of the affected environment, and lands other than those administered by the BLM can be affected by the BLM actions. Information on curlew and pronghorn hunting habitat requirements is contained in the Management Situation Analysis, available for review at the Cody Resource Area office. These areas are good locations for nesting on the ground among low growing vegetation that permits good visibility. Chapman Bench offers this type of habitat. It is the intention of the BLM to maintain suitable nesting habitat in this area and, along with economic and environmental consideration, this may produce certain range treatment options such as opening or closing bluegrama sod and seeding to species that would have more success.

9. We have entered a correction in the "Additions and Corrections for Chapter 3" to reflect the correct figures.

10. The narrative to which you refer pertains to the value of an AUM to the budget of a livestock operation.

11. Precipitation has a direct and profound influence on vegetation production. As at the same time, an individual stock driveway is critical, but may be utilized form precipitation is influenced by the size and extent of snowpack and whether sufficient increases in snowpack are available to utilize that moisture in the photosynthetic processes. The relative health and vigor of most range plants can be negatively influenced by excessive disturbance of defoliation from any source, including grazing. Plants in low vigor generally have shallower and less extensive root systems than plants in high vigor, and, hence, are less able to utilize available moisture or to resist the effects of drought. Positive changes in range condition, including productivity, may be found that improved livestock condition may occur.

12. All projects cannot be implemented, completed, and benefits experienced in one year. It is estimated that implementation would occur over a ten-year period. In addition, it is estimated that at least three years would be required for benefits to be realized, and this would occur over another two year period. It is estimated that the plant community would benefit from 25% to 75% of the potential natural condition for the particular range site improved and from 10 to 60% of total aboveground plant biomass within 75% of the amount expected for the site.

13. The section referred to involves the "Environmental Consequences" of the proposed action. The management actions proposed to be taken under this alternative are found in chapter 7 of the draft RMP/EIS and are presented in figures and capital and estimates changes in livestock numbers and use of public lands. Also please see response to comment 19 of this letter.

14. According to our data on forage production and use in each grazing alternative, the total number of livestock acres, defined as the total number of livestock acres, that exceeds acceptable levels in the data are available for inspection at the resource area office but is too extensive to present here. We have removed to word equal in the text of chapter 4 of this document.

15. Thank you for pointing out this oversight. We have included the Wyola Stake Management Plan in the list of organizations consulted in this final EIS.

16. We have similarly to the information you request on the "Additions and Corrections for Appendices."
The BLM must consider all proposed actions on their own merits within the context of general management guidance and direction set forth in the RMP/EIS. This would allow exceptions to mitigative measures that might not be necessary in individual circumstances or at given times. The responsibility to consider proposed actions is standard operating procedure and does not need to be repeated throughout the RMP/EIS.

2. Please see the response to comment 7 of letter 56.

To clarify what is stated in the draft RMP/EIS and in the proposed plan, the 2-mile restriction on surface-disturbing activities in sage grouse habitat areas is a seasonal restriction, not a NGOs restriction.

The area around raptor nests proposed for seasonal restrictions on surface-disturbing activities, and for avoidance of new rights-of-way, is 1/4 mile, not 1 mile.

3. Please see the response to comment 8 of letter 56.

4. The section on "Additions and Corrections for Chapter 3" contains further discussion on hazardous materials.

5. Please see the response to comment 1 of letter 22.

6. Please see the response to comment 5 of letter 58.
Responses to Letter 72

1. Please see the response to comment 7 of letter 56.

2. Please see the response to comment 6 of letter 56 and comment 5 of letter 58.

3. Please see the response to comment 3 of letter 56.

4. Please see the response to comment 7 of letter 56.

5. Please see the response to comment 8 of letter 56.

6. The statement on page 36 of the draft RMP/EIS to which you refer is misleading. Under "Anticipated Levels of Activity," the document should indicate that geophysical exploration would involve 300 miles of seismic lines per year. We have added this information to chapter 2 of this document. However, for purposes of assessing surface disturbances (see table 26, page 226 of the draft RMP/EIS), 1 acre of surface disturbance has been assumed for each mile of seismic line. The actual level of impacts from these activities would depend on the method used. Some methods have negligible impacts, others have more significant ones. Effects could occur at the rate of 1 acre per mile if several trucks drove across country along a seismic line, compacting soils and disturbing vegetation.

7. Please see the response to comment 3 of letter 56.

8. The section on "Additions and Corrections for Chapter 3" in this document contains additional information on hazardous materials.

9. Please see the response to comment 1 of letter 22.

10. Please see the response to comment 6 of letter 56 and comment 5 of letter 58.

11. Please see the response to comment 5 of letter 58.
Responses to Letter 73

1. Please see the response to comment 1 of letter 20.
2. Please see the responses to comments 2 and 3 of letter 20.
3. Please see the response to comment 4 of letter 20.
4. You are correct. We have corrected the error in the "Additions and Corrections for Chapter 4" in this document.

Group Response to Letters 74 through 76

The concerns in these letters have been addressed in general responses 4 and 5.
Responses to Letter 77

1. We will consult with the Wyoming Recreation Commission, the WSGR, and the Department of Public Lands, on possible land disposals, early in the disposal consideration process. As indicated on page 26 of the draft RMP/EIS, land exchanges would be given priority over other disposal methods.

2. We do not intend to emphasize or require underground installation of electrical and communications systems. The draft RMP/EIS simply indicates that the placement of aboveground power lines would be avoided in the same areas. In these "avoidance areas," one possible mitigative measure would be to bury the lines, but other types of mitigation also may be available. It should be noted that there is concern or emphasis for avoiding placement of "aboveground powerlines" in only a few areas where there is high risk for raptor collisions and electrocutions, in essential black-footed ferret habitat, and in the Chapman Bench proposed ACEC, in the latter two areas, power poles could provide perchs for raptors that may prey on prairie dogs or ferrets or on sensitive waterfowl.

We appreciate your concern that underground facilities can be more expensive. Potential costs, feasible routes, and mitigation of potential environmental effects will be evaluated on a site-specific basis before construction. This evaluation process would be the same whether or not the line was proposed for construction in an avoidance area.

3. Before mineral withdrawals can be established, the BLM must prepare detailed reports assessing the mineral potential of specific sites. These reports make use of available mineral resource information from several sources, including the Geological Survey, U.S. Department of the Interior (GS), the U.S. Bureau of Mines, and the Geological Survey of Wyoming. In many cases, the BLM obtains new information through mineral sample collection and analysis. On the basis of findings related to the occurrence potential of mineral resources, these reports must recommend whether or not the BLM should go forward with the proposed withdrawal. Also, the withdrawal requires environmental analysis to be conducted addressing the impacts which would occur if the lands were withdrawn.

4. The Cody Resource Area will continue to consult with the WSGD on matters relating to the management of wildlife habitat. We will consult with the WSGD in all situations that could involve exceptions to BLM standard mitigation guidelines, particularly in areas of overlapping crucial habitat.

5. Please see to general response 4.

6. The final Grass Creek/Cody wilderness EIS should be available by April or May 1989.

7. It is not our intention that the proposed plan contain management objectives that would administratively prohibit opportunities for development of the state's water resources. Should such circumstances arise through oversight or insufficient foresight, corrective measures can be taken, including amendment of the RMP, if necessary.

8. As new resource information becomes available, we will continue to evaluate the need for protective restrictions in the Cody Resource Area to determine whether greater or lesser levels of restriction are required for specific circumstances. On the basis of these evaluations, the plan will be modified, refined, and amended as appropriate. We will continue contacts and coordination with the state agencies in updating and maintaining the approved RMP, and we will contact them for assistance with detailed activity plans.

77.3

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77.3

77.4
Responses to Letter 78

1. Please see the response to comment 7 of letter 77.

2. In the section on "Additions and Corrections for Chapter 3," we have added language to indicate that salinity may impair water for certain uses. The statement that salinity limits the use of water was meant to imply that salinity is a water quality parameter that needs consideration when water is developed for a particular use. All the sectors that utilize water were listed on page 198 to emphasize the importance of water quality.

3. We agree that our statement was misleading. Accordingly, we have placed new wording in the "Additions and Corrections for Chapter 3."

4. Thank you for the information. Please see the revised table 16 in this document.

Response to Letter 79

1. Please see the response to comment 2 of letter 77
The BLM has no authority to control disposal methods. If an oil company chooses to dispose of its produced water other than by discharging to a surface drainage, the loss of wetland habitat could result. In such a case, there might be some opportunity to negotiate for surface discharges. Specific opportunities would be addressed in the Cody wetlands HMAP or when proposed actions were authorized. If produced water ceased altogether, then the loss of riparian habitat would be inevitable. We cannot require mitigation to offset this loss.

Response to Letter 80

1. Thank you for commenting. The BLM will continue to follow the procedures of the memorandum of understanding.

Responses to Letter 81

1. We are aware of state filing requirements for the permit applications you mentioned. The BLM will comply with state regulations.

2. The BLM has no control over the quantity of produced water that the oil industry generates, however, it does have some control over disposal methods. If an oil company chooses to dispose of its produced water other than by discharging to a surface drainage, the loss of wetland habitat could result. In such a case, there might be some opportunity to negotiate for surface discharges. Specific opportunities would be addressed in the Cody wetlands HMAP or when proposed actions were authorized. If produced water ceased altogether, then the loss of riparian habitat would be inevitable. We cannot require mitigation to offset this loss.
Responses to Letter 82

1. Thank you for pointing out the error on page 170. We have placed new language in the "Additions and Corrections for Chapter 3" to correct the error. Also please see general responses 1 and 2.

2. Please see the response to comment 3 of letter 77.

3. Please see the response to comment 7 of letter 56.

4. Thank you for the additional information. Our projections described on page 240 were based on the best information available at the time the draft RAMP was prepared. If output revenue, personal income, and employment should change as a result of the project you describe, these changes would be the same for all alternatives.

5. Please see the response to comment 2 of letter 11.

6. Most of the areas on Carter Mountain that are subject to landslides are on private land. The potential for landslides and other natural hazards would be considered in detailed activity plans. In fact, many of the identified landslide areas correspond to areas shown on map 13 as areas where vehicular use is limited to designated roads and trails. The BLM will consider which areas are potential landslide hazard areas in determining which roads would be appropriate for closure. Landslides and other natural hazards also will be considered in the evaluation of use authorizations in the area.

7. Significant palaeontological resources would be protected from surface-disturbing activities in the same manner as significant cultural resources. The text in chapter 2 of this final document contains language to that effect.

8. The Buffalo Bill Reservoir spring is on land managed by the Bureau of Reclamation. The spring is at the bottom of that reservoir. Therefore, it is unlikely that this spring would be affected by surface-disturbing activities conducted on BLM-administered lands. Protection of the Little Mountain and Sheep Mountain thermal springs would be afforded by the NPS restriction for important areas with which these springs are associated. Also please see the response to comment 2 of letter 11.

9. Please see the response to comment 6 of this letter.

10. The occurrence of selenium accumulating plants was not raised as an issue or concern during the public scoping process. Specific problems with selenium or other poisonous plants would be avoided through proper livestock and grazing management practices.

11. Please see the response to comment 3 of letter 77.

12. Please see the response to comment 1 of letter 20.

13. Thank you for pointing out the discrepancy. The Carter Mountain proposed ACEC would not be closed to locatable mineral entry under the proposed plan. We have made a correction in this final document.

14. Chapman Bench is underlain by limestone sand and gravel deposits. A few miles to the south, deposits of this type have been claimed for 'uncommon varieties of sand and gravel' and other minerals. On the basis of site-specific evaluations and testing, we do not believe these gravels are 'uncommon.' Most of the proposed ACEC is segregated from mineral entry by a Bureau of Reclamation withdrawal, but if these lands opened to mineral entry, sand and gravel claims could be filed or on Chapman Bench. Gravel mining would not be compatible with management of the area for recovery habitat for the candidate species (see appendix D). If mining claims became established, their removal would require a withdrawal after the fact, which could involve lengthy hearings and appeals.
Responses to Letter 83
1. Map 48 indicates stream segments that are impaired by sediment from nonpoint sources primarily from rangelets, not sediment source areas as illustrated on DEQ's map. The stream segments identified by BLM are within drainages that we have good management control over because of the land ownership pattern. Map 17 of the draft RMP/EIS illustrates the top two priority areas for improvement through detailed activity plans, including watershed management plans. Our identification of impaired stream segments was based on sediment yield estimates generated by the Pacific Southwest Inter-Agency Committee (PSIAC) method.

2. Stream habitat conditions were classified according to "Condition Classes for Streambanks and Shorelines" (Federal Register, February 5, 1980, volume 43, pages 7689 through 7695).

3. The point of our discussion on page 225 of the draft RMP/EIS was to give a general description of the compaction process and its ramifications. Soil compaction usually will negatively impact the soil surface during whatever period the compaction persists.

82.4

82.5

83.1

83.2

Page 21 of 21, Appendices I, II, III

The individual aesthetic components included here are the EEG, 186 APP A and B, 187 188 TABLES 1-5, FIGURES 1-10, and APPENDICES I, II, III. This appendix contains these components, along with the Appendixes to the report. Please refer to the full text for additional information.

Page 21 of 21, Appendices I, II, III

The individual aesthetic components included here are the EEG, 186 APP A and B, 187 188 TABLES 1-5, FIGURES 1-10, and APPENDICES I, II, III. This appendix contains these components, along with the Appendixes to the report. Please refer to the full text for additional information.
1. Alternative D was compiled from elements of Alternatives A, B, and C. It contains many of the strategies of Alternative C, particularly those that pertain to wildlife-related restrictions on surface-disturbing activities.

2. Please see the response to comment 20 of letter 68.

3. Please notice that the 1987 big game season range overlays provided in Figure 1 of your comments were not consistent with the seasonal ranges identified by WGFD Game Division 2. The overlays you provided are the same as the seasonal ranges updated by Game District 2 in July 1986. If additional permit areas are identified by the WGFD, necessary seasonal restrictions would be applied.

4. Please see the response to comment 2 of letter 6.

5. We have modified the proposed plan in this document to make the BLM tracts in the Yellowstone Wildlife Habitat Management Unit subject to an ESIA restriction for exploration and development of leaseable minerals. Other surface-disturbing activities generally would be prohibited. The areas were used for wildlife, wild horses, and general exploration and development subject to valid existing rights. Such a closure would not have the same economic impact as the mining claims in the future because it would be subject to the valid rights of existing mining claims.

6. We recognize that as data collection and analysis techniques are refined, and as environmental parameters change, seasonal range boundaries will be modified. The proposals in the draft RMP/EIS would apply to the seasonal ranges where they would occur and not to a specific area on a map. See also response to comment 20 of letter 68.

7. Please see the response to comment 20 of letter 68.

8. The BLM will continue the cooperative effort with the WGFD and the FS to improve bighorn sheep habitat on the West Slope of the Big Horn Mountains. We have modified the RMP/EIS to include this objective.

9. According to WGFD Game District 2, no pronghorn crucial winter range is delineated in the planning area. Of the 451,000 acres of mule deer crucial winter range in the planning area, only 7.5% of this crucial winter range is outside the full suppression areas (see map of draft RMP/EIS). These 45,000 acres of crucial winter range are in the Dragoon Basin, in the Red Cabin area, and on the Greybull River. We believe these existing areas are on private land and would have to be purchased by the State to have a significant effect on wintering mule deer, and most of these areas on the Greybull River are on private land.

10. In the development of detailed activities, the BLM will cooperate fully with the WGFD to improve bighorn sheep and elk habitat through the use of prescribed fire.

11. The BLM plans to implement the revised Rattlesnake Mountain Forest/Habitat Management Plan in 1989. This plan currently is in the development stages and is being closely coordinated with WGFD Game District 2 and Habitat Region 2. Adequate stands of mature and old-growth timber of all types would be maintained. With this plan, we believe we can accomplish both wildlife and timber management objectives on Rattlesnake Mountain.

12. Please see the response to comment 10 of letter 19 and response to comment 18 of letter 68. The regeneration of specific coniferous stand types will be considered in the Wetlands RMP and in other detailed activities plans.

13. Our statements regarding forage competition reflect a summary of the impacts of grazing animals on vegetation. These grazing animals include wildlife and livestock as well as domestic livestock. A summary of impacts does not reflect a commitment on the part of BLM to overstock the range.
33. Please see the responses to comments 2 and 5 of this letter.
34. Please see the response to comment 32 of this letter.
35. We will cooperate with the FS and the WGFDO in any way possible to locate new access as needed.
36. Please see the response to comment 3 of this letter.
37. We look forward to working with WGFDO to increase public access to fishing areas.
38. Please see the response to comment 1 of letter 77.
39. These items will be addressed by the Wetlands HMP.
40. Thank you for the information. Please see the reprinted table in this document.
41. Thank you for the information. The document has been revised accordingly. Please see Table of Test Additions and Corrections.
42. Please see the response to comment 1 of letter 77.
43. Please see the responses 35 and 37 of this letter.
44. Implementation schedules, monitoring, and available resources and timing are appropriate considerations for the activity planning level. Please see general response 1.
### Responses to Letter 85

1. Thank you for your comments.

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**Letter 85**

**June 30, 1968**

Mr. J. M. Shook

Western Regional Department of Health and Human Resources

3400 Wisconsin Avenue, N.W.

Dear Mr. Shook,

Thank you for your letter and your suggestions. It is interesting to note your concern about the potential for uncertainties in the interpretation of estimates. I have been aware of this issue for some time and am currently working on a solution to address these concerns.

The current approach involves using multiple models to estimate the occurrence of potential scenarios. This allows for a more accurate representation of the potential outcomes and reduces the risk of misinterpretation.

Additionally, we are planning to conduct a pilot study in the upcoming months to further refine our estimation process. This will involve gathering data from a smaller sample to test the effectiveness of our current methods.

Thank you for your interest in this matter. I am confident that with the improvements we are making, we will be able to provide more reliable estimates in the future.

Sincerely,

[Signature]

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**Table: Estimated Total Economic Value of Expenditures in the Past Five Year Period**

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated Total Economic Value of Expenditures</th>
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<td>2014</td>
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**Table: Estimated Total Economic Value of Expenditures in the Current Year Period**

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</thead>
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<tr>
<td>May</td>
<td>$50,000,000</td>
</tr>
</tbody>
</table>

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**Graph:**

- Title: Estimated Total Economic Value of Expenditures
- X-axis: Year
- Y-axis: Estimated Total Economic Value of Expenditures
- Data points for each year from 2018 to 2014

---

**Diagram:**

- Title: Estimated Total Economic Value of Expenditures
- Scale: Year
- Data points for each year from 2018 to 2014

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**Note:**

This report was generated using 2018 data and is subject to revision based on further analysis and updates.
5. Please see the response to comment 5 of letter 3.

6. This is a mile, or visual horizon, setback is a relatively well-established guideline, based on published studies. However, flexibility might be considered if the area is too small for any activity plan. Table 3 does not include our provisions for limiting ORV use, provisions for the management of livestock and timber to reduce soil erosion and sedimentation, or the creation of fisheries and wildlife habitat.

We will provide opportunities for public input during development of this activity plan and other recreation-related activity plans.

Please see the response to comment 5 of letter 3.

5. Please see the response to comment 5 of letter 3.

5. Please see the response to comment 5 of letter 3.

5. Please see the response to comment 5 of letter 3.

5. Please see the response to comment 5 of letter 3.

5. Please see the response to comment 5 of letter 3.
Responses to Letter 87

1. Please see the response to comment 7 of letter 56.

2. It would be misleading to compare directly, the relationship between oil and gas leasing restrictions and benefits or adverse effects to wildlife (as shown on tables 29 and 47). Many of the effects to wildlife are the result of a long-term trend that would continue for the next 10 years, regardless of the level of restriction placed on oil and gas exploration and development. Oil and gas exploration and development and other surface-disturbing activities pertain only to some of the benefits and adverse effects to wildlife.

Please see appendix K of this document for discussion of statutory and regulatory provisions, including information on the analyses for post-lease activities.

3. Please see the response to comment 1 of letter 56 and response to comment 1 of letter 57.

4. Please see the response to comment 2 of letter 56.

5. The reference on table 3 to a plan amendment for stipulation with the

6. Site-specific road standards for use in the Carter Mountain proposed ACEC cannot be identified at this time and would not be appropriate for inclusion in the RMP/IES.

NOTE: Through an error in filing and numbering, we counted one letter twice. The letter numbered “88” was a copy of an earlier letter to which responses had already been prepared. The error was discovered too late to renumber all subsequent letters.
Response to Letter 88

1. Because of a numbering error, we do not have a letter number 88.
Response to Letter 91
1. Please see general response 5.

Response to Letter 92
1. Please see general responses 3 and 5.
Responses to Letter 94

1. Please see the response to comment 7 of letter 56 and response to comment 5 of letter 58.
2. Please see the response to comment 8 of letter 56.
3. Please see the response to comment 7 of letter 58.
4. Please see the response to comment 1 of letter 56.
5. Please see the response to comment 11 of letter 56.
6. Please see appendix K of this document.

94.3

Mr. Bob Ross
Environmental Policy
U.S. Department of Interior
P.O. Box 6512
Sacramento, CA 95812

May 23, 1986

Subject: Meeting with Dr. Fred Ross

Dear Mr. Ross:

The draft plan does not include any references to the 1938 Act. As the Amador County Water District has noted, the plan is not an exercise in compliance with the 1938 Act. However, I am aware of the importance of considering the 1938 Act when developing subsequent plans. The purpose of this letter is to provide an overview of the provisions of the 1938 Act that are relevant to the development of the draft plan.

The 1938 Act requires that the water resources of the United States be conserved and protected in the interest of public health and welfare, and the economy of the nation. The act establishes a federal water resources program to provide a framework for the development and management of water resources.

The act establishes the Federal Water Resources Council (FWRC) as the highest policy-making body for water resources development. The FWRC is responsible for developing long-term policies for the development and management of water resources.

The act also provides for the establishment of the Federal Water Resources Administration (FWRA) to carry out the policies established by the FWRC. The FWRA is responsible for the development and management of water resources projects.

The provisions of the 1938 Act also include a provision for the development of water resources projects. The provision requires that the development and management of water resources projects be carried out in a manner that is consistent with the policies established by the FWRC.

The provisions of the 1938 Act also include a provision for the development of water resources projects in a manner that is consistent with the policies established by the FWRC.

In developing the draft plan, it is important to consider the provisions of the 1938 Act. The draft plan should reflect the policies established by the FWRC and the provisions of the 1938 Act.

Sincerely,

[Signature]

[Name]

94.4

Mr. Bob Ross
Environmental Policy
U.S. Department of Interior
P.O. Box 6512
Sacramento, CA 95812

May 23, 1986

Subject: Meeting with Dr. Fred Ross

Dear Mr. Ross:

The draft plan does not include any references to the 1938 Act. As the Amador County Water District has noted, the plan is not an exercise in compliance with the 1938 Act. However, I am aware of the importance of considering the 1938 Act when developing subsequent plans. The purpose of this letter is to provide an overview of the provisions of the 1938 Act that are relevant to the development of the draft plan.

The 1938 Act requires that the water resources of the United States be conserved and protected in the interest of public health and welfare, and the economy of the nation. The act establishes a federal water resources program to provide a framework for the development and management of water resources.

The act establishes the Federal Water Resources Council (FWRC) as the highest policy-making body for water resources development. The FWRC is responsible for developing long-term policies for the development and management of water resources.

The act also provides for the establishment of the Federal Water Resources Administration (FWRA) to carry out the policies established by the FWRC. The FWRA is responsible for the development and management of water resources projects.

The provisions of the 1938 Act also include a provision for the development of water resources projects. The provision requires that the development and management of water resources projects be carried out in a manner that is consistent with the policies established by the FWRC.

The provisions of the 1938 Act also include a provision for the development of water resources projects in a manner that is consistent with the policies established by the FWRC.

In developing the draft plan, it is important to consider the provisions of the 1938 Act. The draft plan should reflect the policies established by the FWRC and the provisions of the 1938 Act.

Sincerely,

[Signature]

[Name]
Response to Letter 96

1. The BLM does not intend to constrain the management or use of state lands and minerals. Thank you for pointing out the error on map 36. The map has been modified and reprinted in this document.

Response to Letter 97

1. Please see general response 4.
Response to Letter 98

1. Thank you for your comments.

Response to Letter 99

1. Please see general responses 3 and 5.

Response to Letter 100

1. Please see general responses 3 and 5.

Response to Letter 101

1. Thank you for your comments.
Response to Letter 102

1. Please see the response to comment 8 of letter 69.
2. Please see general responses 3, 4, and 5.
3. Please see the response to comment 6 of letter 4.
4. Please see the response to comment 4 of letter 3.
5. Please see general response 8.

6. We do not believe that our proposed management for improvement of grazing lands and aquatic systems is "status quo." Please see the response to comment 6 of letter 69.

APPENDIXES

INTRODUCTION

Appendices A, C, D, F, H, and I have not been reprinted in this final document. However, there is a supplement to Appendix E of the draft RMP/EIS. Appendices B and G have been modified; the new versions appear herein. Appendices J and K are new. Additions and corrections for the appendices in the draft RMP/EIS are listed herein, followed by appendices B, E, G, J, and K.

ADDITIONS AND CORRECTIONS FOR APPENDIXES

Page numbers refer to pages in the draft RMP/EIS. A partial paragraph at the top of a column counts as paragraph 1. The changed or added material in the "Should Read" column is in bold type.

<table>
<thead>
<tr>
<th>Draft</th>
<th>Page</th>
<th>Column</th>
<th>Paragraph</th>
<th>Line(s)</th>
<th>Should Read</th>
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<tr>
<td>296</td>
<td>2</td>
<td>Add a</td>
<td>new section</td>
<td>after 3</td>
<td>A new section should be added with the subheading Hazardous Materials and Waste Management</td>
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The BLM considers the following to be hazardous materials: Those materials listed or characterized in 40 CFR 261 under regulations of the Resource Conservation and Recovery Act (RCRA), as amended, and defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) also known as "Superfund", and the Superfund Amendments and Reauthorization Act (SARA).
Table ADJUSTMENTS

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<th>Column</th>
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<td>4</td>
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<td>Grazing Management is governed by the Taylor Grazing Act, the Federal Land Policy and Management Act, the Public Rangelands Improvement Act, and 43 CFR 4000. Practices and procedures initiated on public lands for the management of livestock grazing are also controlled or restricted by the policies and regulations as they relate to other resources. Grazing leases or permits will be issued in accordance with the designated preference and authorized season-of-use until such time as monitoring indicates a change in management direction is required. Restoration or improvement.</td>
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<tr>
<td>309 Table F-1</td>
<td></td>
<td></td>
<td></td>
<td>Change 7.819 to 9 for Alternative D.</td>
</tr>
<tr>
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<td></td>
<td>Change 19,000 to 12,285 for Alternatives C and D.</td>
</tr>
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<td>310 3</td>
<td>1</td>
<td>9</td>
<td></td>
<td>land where no water sources.</td>
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<tr>
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<td>2, 3</td>
<td></td>
<td></td>
<td>expected. Land can.</td>
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<tr>
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<td></td>
<td>when no desert land applications have been received.</td>
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<tr>
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<td>1</td>
<td>3</td>
<td></td>
<td>Change 19 to 490</td>
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APPENDIX B

STANDARD MITIGATION GUIDELINES

INTRODUCTION

This appendix is a revised from appendix B in the draft RMP/EIS. These guidelines have been evolving from their beginnings as oil and gas lease stipulations to broader application to other land uses. We hope this will clarify the meaning, intent, and use of the guidelines.

About two years ago, the BLM developed the “Wyoming BLM Standard Oil and Gas Lease Stipulations.” During implementation, the BLM recognized that similar kinds of environmental protection requirements should be applied to land uses other than those related to oil and gas exploration and development. Using the standard oil and gas lease stipulations as a basis, we began development of the “Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities." The term guidelines better describes the intent and use of these mitigation standards than would stipulations, measures, or requirements.

These guidelines are used in the RMP/EIS process as a tool to help develop the RMP alternatives and to provide a baseline for comparative impact analysis through which we can arrive at RMP decisions. They will be used in the same manner in analyses of activity plans and other site-specific proposals.

These guidelines and their wording are a matter of policy. As such, further refinement in their wording and application may be made in the future. Any further refinement of these guidelines and any development of program-specific standard stipulations will be handled through administrative review, not through the RMP/EIS process. Appropriate public involvement and input will be included.

PURPOSE

The primary purpose of these guidelines is to attain statewide consistency in the method of determining requirements for avoiding and mitigating environmental impacts and conflicts among resources or land uses. “Consistency” does not mean that requirements would be identical for all similar types of land use activities or that the requirements for a given land use activity would be identical in all areas where it may occur.

Application of the guidelines is intended to (a) reserve for the BLM the right to modify the operations of all surface-disturbing activities as part of the statutory requirements for environmental protection, and (b) inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands. The guidelines may be used directly as stipulations, or they may be modified with specific or specialized mitigation following the submission of a detailed plan of development or other project proposal and an environmental analysis.

Resource activities or programs without a standardized set of permit or operation stipulations can use the mitigation guidelines as conditions of approval or as a baseline for developing specific stipulations for a given activity or program.

There are two ways in which the standard mitigation guidelines are used in the RMP/EIS process:

As part of the planning criteria used in developing the RMP alternatives, the Wyoming BLM standard mitigation guidelines become conditions of the actions being proposed or considered in each alternative as appropriate.

In the analytical processes of developing the alternatives and analyzing the impacts of the alternatives, the guidelines are used for (a) development of a baseline for measuring and comparing impacts among the alternatives, (b) identification of other actions and alternatives that should be considered, and (c) determination of whether more stringent or less stringent mitigations should be considered.

Because the standard mitigation guidelines are integrated into the RMP/EIS process and used in conducting site-specific environmental analyses, the application of stipulations derived through the guidelines will provide more consistency with planning decisions and plan implementation than has occurred in the past. Application of the standard mitigation guidelines to all human-caused surface-disturbing activities on BLM-administered public lands will provide more uniformity in mitigation than has occurred in the past.
1. Surface Disturbance Mitigation Guideline

Surface disturbance will be restricted in any of the following areas or conditions. Modifications to this limitation may be approved in writing by the Authorized Officer

a. Slopes in excess of 25 percent.

b. Within important scenic areas identified in a land use plan (Class I and II Visual Resource Management areas).

c. Within 500 feet of surface and/or riparian areas.

d. Within either one-quarter mile the visual horizon (whichever is closer) of historic trails.

e. Construction with frozen material or during periods when the soil material is saturated, frozen, or when watershed damage is likely to occur.

Guidance

The intent of the surface disturbance mitigation guideline is to inform interested parties (potential lessees, permittees or operators) that when one or more of the five conditions (as shown) exist, surface-disturbing activities will be restricted or prohibited, unless or until the permittee or his designee and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation will occur prior to development.

Specific criteria (e.g., 300 feet from water) have been established based on current planning and information available. However, such items as geographical areas and seasons must be delineated.

Waiver or modification of requirements developed from this guideline must be based upon environmental analysis of proposed plans and environmental, operational, or applications for permit to drill and, if necessary, must allow for other mitigation to be applied on a site specific basis.

2. Wildlife Mitigation Guideline

a. To protect important big game winter habitat, activities or surface use will not be allowed during the period from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria applies to defined big game birthing areas from the period of May 1 to June 30.

This limitation may or may not apply to extended long-term operation and maintenance of a developed project, pending environmental analysis of any operational or production aspects.

Modifications to this limitation in any year may be approved in writing by the Authorized Officer.

b. To protect important raptor and/or sage and sharp-tailed grouse nesting habitat, activities or surface use will not be allowed during the period from February 1 to July 31 within certain areas encompassed by the authorization. The same criterion applies to defined big game birthing areas from the period of November 15 to April 30.

c. Construction with frozen material or during periods when the soil material is saturated, frozen, or when watershed damage is likely to occur.

Guidance

The wildlife mitigation guideline is intended to provide two basic types of protection, seasonal restriction (a and b) and prohibition of activities or surface use (c). Item c, d, of course, is specific to situations involving threatened and endangered species. Legal descriptions will ultimately be required and should be measured from any applicable minimum subdivision requirements at this time. The area delineated can and should be defined as necessary, based upon current biological data, prior to approving an application and issuing the use authorization. The legal description must eventually become a condition for approval of the permit, plan of development, and/or other use authorization.

The seasonal restriction section identifies three example groups of species and delineates three similar time frame restrictions. The big game species include elk, mule deer, antelope, and bighorn sheep. All big game species require protection of critical winter range between November 15 and April 30. Elk, mule deer, and bighorn sheep also require protection from disturbance during the period of May 1 to June 30. These are the periods when these species are in the most distinct calving and lambing areas. Raptors include eagles; ospreys, and falcons; falcons (perched or in flight); owls, and ravens. Aquatic birds include ruddy turnstone, and Swainson's hawks, osprey, and barn owls. The raptors, eagles, ospreys, and falcons will not need protection during the period of February 1 to July 31. The same criteria apply, however, for disturbance during the period of November 15 through April 30 while they occupy winter range areas.

Item c, regarding the prohibition of activity or surface use, is intended for protection of unique wildlife habitat areas or values within the use area. These areas or values may be factors that limit site-life activities (e.g., sage grouse nesting grounds, known threatened and endangered species habitat) that cannot be protected using seasonal restrictions.

1. Surface Disturbance Mitigation Guideline (cont.)

The intent of the season restriction criteria applies to defined big game birthing areas from the period of November 15 to April 30 within certain areas encompassed by the authorization. The same criterion applies to defined big game birthing areas from the period of November 15 to April 30. The same criteria apply, however, for disturbance during the period of November 15 through April 30 while they occupy winter range areas.

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Appendix B: Standard Mitigation Guidelines

Guidance

The no surface occupancy (NSO) mitigation guideline is intended for use only when other mitigation is determined insufficient to protect the public interest adequately, and it is the only alternative to "no development" or "no leasing." The legal subdivision and resource value of concern must be identified and be tied to an NSO land use planning decision.

Waiver of or exception(s) to the NSO requirement will be subject to the same test as used to justify its imposition. If, upon evaluation of a site-specific proposal, it is found that less restrictive mitigation would adequately protect the public interest or value of concern, then a waiver or exception to the NSO requirement is possible. The record must show that because of conditions or uses of the land, less restrictive requirements will protect the public interest. An environmental analysis must be conducted and documented (EA or EIS, as necessary) in order to provide the basis for a waiver or exception to an NSO planning decision. If the waiver or exception is found to be consistent with the intent of the planning decision, it may be granted. If found inconsistent with the intent of the planning decision, a plan amendment would be required before the waiver or exception could be granted

T 52 N., R. 93 W., sec 3, SE4SE4; sec 4, SE4SE4; sec 10, N/4
T 52 N., R. 94 W., lots 47B (40.97), C (40.95), D (40.94), E (40.95), F (40.96), 49A (40.36).
T 52 N., R. 95 W., sec 10, 10 SRR (44.62).
T 52 N., R. 101 W., sec 1, lot 1, (52.36); sec 7, lot 1 (31.98); sec 8, lots 3 (49.98), 4 (32.43), 5 (36.58); N4NW4SW4, N4SE4SW4, sec 9, lots 1 (19.80), 2 (26.66), 3 (26.54), 4 (29.36), 5 (29.37), 6 (19.32); sec 12, lots 1 (27.77), 2 (37.06), 3 (30.32), 4 (29.83).
T 52 N., R. 101 W.; tract 553 (29.91).
T 53 N., R. 101 W.; sec 21, lot 3 (7.05).
T 54 N., R. 101 W., sec 3, FMUA (17.50).
T 54 N., R. 102 W., sec 9, lot 1 (23.11); sec 12, N4NE4.
T 56 N., R. 94 W., sec 18, lot 50B (29.61); sec 19, lot 4 (43.84), lot 55E (29.35); tract 65B (30.64).
T 56 N., R. 95 W., sec 12, lot 1 (51.50); sec 24, lots 55C (9.62), D (9.75); tract 65A (7.68).
T 57 N., R. 101 W., sec 3, S4NE4, NE4SW4, sec 6, NE4SE4.
T 57 N., R. 102 W., sec 20, N4NW4, sec 22, NE4SW4, sec 24, SE4NW4.
T 57 N., R. 103 W., sec 12, E4NE4, NW4NE4, NE4SE4.
T 58 N., R. 95 W., sec 29, SW4NE4, sec 33, NE4NW4, NE4NW4.
VEGETATION INVENTORY METHODS AND HISTORY IN THE PLANNING AREA

Background

In December 1982, the BLM adopted as its principal rangeland inventory method the Range Site Inventory procedure described in the National Range Handbook. This procedure involves the correlation of a soil series to a specific range site. A range site is a distinctive kind of rangeland that differs from other types of rangeland in its ability to produce a characteristic natural plant community. The species composition and total production levels vary between range sites, providing different potentials, objectives, and stocking capabilities for each specific plant community.

Inventories in the Planning Area

The Cody range staff conducted a vegetative inventory to meet the requirements addressed in the Federal Land Policy and Management Act of 1976 and the Public Rangelands Improvement Act of 1978 during 1984 through 1986. The method involved the ocular estimation of plant species composition, production, and plant cover for each delineated site. The seral stage (ecological condition) of each range site was then recorded, or if more than one stage existed within a given range site, that site was listed under two or more seral stages.

Ecological condition classes were determined by comparing the present plant community with that of the climax plant community or potential as indicated by the Soil Conservation Service (SCS) range condition guide for the site. Four classes are used to express the degree that a present plant community reflects its potential climax community; for example, if the seral stage or ecological status represents 76% to 100% of the climax plant community, it is rated excellent; 51% to 75% (late seral), good; 26% to 50% (mid-seral), fair; or 0% to 25% (early seral), poor.

APPENDIX G

LIVESTOCK GRAZING MANAGEMENT

The SCS range site guides used in the Cody Planning Area did not accurately reflect the true production capabilities of the inventoried plant communities in some cases. For example, some range sites in the planning area that would be in good condition because of plant species composition alone did not have a sufficient level of vegetative production to correspond to a good condition rating as suggested in the range site guides. Therefore, the ecological condition classes shown in table G-2 and in chapter 4 may not convey the true condition of the rangeland in the planning area without further analysis. However, ecological condition as displayed represents a baseline or starting point for establishing management objectives for future range condition, for providing reasonable stocking level proposals, and for measuring range improvement over time.

The ecological condition classes assigned to each range site were further adjusted, if necessary, on the basis of current production levels obtained in the specific geographical area around Cody. A condition rating based on the percentage of composition alone may need adjustment if the total production is less than that characteristic for the condition class. The concept is in accordance with the National Range Handbook (305.5(a)) for the determination of range condition classes. Annual climatic data was also considered before a condition class was adjusted because of lower production levels.

The final condition classes by range site were associated with a proposed stocking level, as suggested by the Soil Conservation Service in its range site descriptions. This information was used to establish proposed stocking rates for the preferred alternative in conjunction with management objectives specific to each allotment. However, since no one-time inventory can accurately and consistently determine livestock grazing capacity and many variables are associated with each site (climatic fluctuations, seasons of use, and distribution), preference would be allowed until data can be obtained through a three- to five-year monitoring program.

Time and funding constraints prevented a complete inventory of the Cody planning area. However, approximately 814,423 acres have been
Appendix G: Livestock Grazing Management

mapped by range site. This represents 75% of the total planning area. The remaining acres are to be mapped as time and personnel become available. The inventory effort was concentrated on allotments that had been tentatively placed in "I" category because of existing management, vegetative condition, or resource conflicts (allotment categorization is described in the next section of this appendix).

Concerns expressed by other resource specialists provided the basis for assigning priority to areas requiring vegetative information for the determination of actual resource conflicts. As a result of this interdisciplinary approach in tentative categorization of the allotments, the range staff was able to obtain vegetative information on all the final "I" category allotments and a large portion of the "M" and "C" allotments within the planning area.

THE ALLOTMENT CATEGORIZATION PROCESS

Assignment of Category

The criteria used for the placement of the allotments into the categories were based on resource potential, resource use conflicts or controversy, opportunity for positive economic return on public investment, and the present management situation. The specific criteria used for each category are as follows:

Category "M": Maintain Existing Resource Conditions

The present range condition and management are satisfactory.

Good to excellent condition and will be maintained under present management, or

Fair condition and improving with improvement expected to continue under present management.

Allotment has a potential for moderate or high vegetative production and is producing at or near this potential.

There are no significant land-use resource conflicts with livestock grazing.

Landownership status may or may not limit management opportunities.

Opportunities for positive economic return from public investment may exist. Even though percentage of public land is low or acreage of public land is small, opportunity for positive economic return may still exist.

Category "I": Improve Existing Resource Conditions

Present range condition is unsatisfactory.

Range condition is poor to fair.

Range condition is expected to decline further.

Present grazing management is not adequate.

Allotment has potential for medium to high vegetative production but production is low to moderate.

Resource conflicts/controversy with livestock grazing are evident.

There is potential for positive economic return on public investment.

Category "C": Custodial Management

Present range condition is not in a downward trend.

Allotment has a low vegetative production potential and is producing near this level.

There may or may not be limited conflicts between livestock grazing and other resources.

Present management is satisfactory or is the only logical management under existing conditions.

Opportunities for positive economic return on public investments do not exist.

Management Objectives

"M" Allotments

To authorize actions that are consistent with or will maintain current uses and satisfactory range condition and productivity. Monitoring studies will be established at a level that will detect changes in present resource management and/or condition. The intensity and workload requirements of the studies will depend on the resource values involved.

"I" Allotments

To implement management actions that will improve existing resource condition and productivity and enhance overall multiple use opportunities. Monitoring will be carried out at an intensity sufficient to support actions taken toward achieving management objectives and will be implemented on a priority basis. Monitoring will continue at a lower intensity to ensure the effectiveness of the actions.

"C" Allotments

To manage the allotment in a custodial manner while protecting the existing resource values. Management actions will emphasize the issuance of billings, grazing leases, and transfers. Monitoring will consist of periodic allotment inspections and use of supervision to detect possible changes in existing resource values. A specific schedule for monitoring will not be developed, but monitoring will be conducted as the opportunity arises in conjunction with other range management work.

CURRENT GRASSING ALLOTMENT INFORMATION

Table G-1 lists livestock grazing information specific to each allotment in the planning area.

Table G-2 shows the range condition for each inventoried allotment. About 25% of the planning area was included in the ecological condition class inventory. Because the inventory focused on "I" category allotments and areas of perceived vegetation conflicts, ecological condition for the planning area as a whole may be somewhat lower than conditions shown by the inventory. Ecological condition could also be subject to modification based on further analysis of SCS range guidelines in the Bighorn Basin as described previously in this appendix.

PROBLEMS, CONFLICTS AND OPPORTUNITIES IN GRAZING MANAGEMENT

Identification of Problems

Through consultation with grazing permittees and lessees during the categorization process and by analysis of baseline vegetation inventory data, BLM personnel have identified problems associated with livestock grazing in the planning area. Opportunities are available for resolution of livestock grazing problems and conflicts.

"I" category allotments generally show the greatest need for development and present the greatest opportunities to resolve both management problems and individual concerns. Problems associated with "I" category allotments are listed, and possible management opportunities or actions to resolve them are discussed. "C" and "M" category allotments are not discussed, because no conflicts have been identified or because intensive management is not warranted for a variety of reasons.

Adjustments would not be made until monitoring verified the conflict and determined its extent. Data gathered by monitoring and through additional consultation and coordination with affected parties would support management decisions related to livestock and wildlife stocking levels and other adjustments.

Problems, Conflicts and Opportunities in the Planning Area

Problems in grazing management in the planning area are identified in table G-3, which also indicates possible solutions.
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<th>Allotment Name</th>
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<th>Season of Use</th>
<th>Grazing Preference (AUMs)</th>
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**TABLE G-1 (Continued)**

**LIVESTOCK GRAZING ALLOTMENT INFORMATION**
### TABLE G-1 (Continued)

**LIVESTOCK GRAZING ALLOTMENT INFORMATION**

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Appendix G: Livestock Grazing Management
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1 (WH) by an allotment name indicates that the allotment is inside a wild horse range. Allotments 2511, 2523, and 2551 are not named.

2 The following are abbreviations for season of use: Sp = spring grazing, S = summer grazing, F = fall grazing, W = winter grazing, and Y = grazing allowed in any season.
### Table G-2: Summary of Range Condition by Allotment

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Appendix G: Livestock Grazing Management

TABLE G-3

PROBLEMS, CONFLICTS AND OPPORTUNITIES IN LIVESTOCK GRAZING MANAGEMENT

Types of problems and conflicts that can occur in livestock grazing management are listed in Part One of this table by number. Management opportunities for actions to improve management and resolve conflicts also are listed by number.

Part Two of this table is an allotment-specific listing of livestock grazing problems and conflicts in the planning area and the management opportunities to alleviate those conflicts in each allotment.

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<th>Types of Problems and Conflicts</th>
<th>Management Opportunities</th>
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<td>1. Existing water sources are insufficient to allow uniform distribution in the allotment as a whole or are unreliable. Some areas are being overutilized near existing water; other portions of the allotment are not providing the number of AUMs authorized.</td>
<td>1. Improve livestock distribution by developing additional water projects and/or salting. Implement grazing management systems that would alter traditional grazing patterns. Adjust the existing stocking distribution to reflect actual production levels and accessible units. On the basis of season of use and vegetative types, specify the appropriate class or kind of livestock that will best utilize the allotment.</td>
</tr>
<tr>
<td>2. The boundary of the allotment is not fenced or secured by natural boundaries that will control authorized livestock. Livestock occasionally drift into or out of the authorized allotment, resulting in trespass situations.</td>
<td>2. Control livestock use by constructing boundary fences or additional cross-fences.</td>
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<td>3. Certain portions of the riparian habitat in one or more of the following areas are in an unsatisfactory condition: Riparian Zones in &quot;I&quot; Category Allotments a. Bear Creek b. Big Sand Coulee c. Cedar Creek d. Cottonwood Creek e. Crystal Creek f. Deer Creek g. Dry Creek h. Little Sand Coulee i. Horse Creek j. Slack Creek k. Little Rose l. Oregon Coulee m. Post Creek n. Rawhide Creek o. Rose Creek p. South Fork Dry Creek q. Sulphur Creek r. Sunlight Gulch</td>
<td>3. Improve riparian habitat conditions by installing protective fencing, developing range improvement projects to provide off-site waters, developing special use pastures, changing season of use or class of livestock, improving water distribution and quality, improving upward forage, implementing intensive rotational grazing, or increasing livestock herding.</td>
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<tr>
<td>4. Existing preference exceeds the current production capabilities of the vegetation communities involved.</td>
<td>4. Monitor actual livestock utilization in relation to actual numbers to determine proper carrying carrying capacity.</td>
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---

Appendix G: Livestock Grazing Management

TABLE G-3 (Continued)

PROBLEMS, CONFLICTS AND OPPORTUNITIES IN LIVESTOCK GRAZING MANAGEMENT

<table>
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<th>Types of Problems and Conflicts</th>
<th>Part One (Continued)</th>
<th>Management Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Occupation of this allotment by wildlife during traditional livestock grazing periods has resulted in dietary competition in one or more of the following: a. Pronghorn b. Mule deer c. Elk d. Bighorn sheep e. White-tailed deer f. Spring, summer conflict g. Winter, fall conflict h. Insufficient grasses i. Insufficient forbs j. Insufficient shrubs</td>
<td>5. Monitor actual numbers of both livestock and wildlife during critical periods to determine appropriate or acceptable levels. Actions may then be necessary to redistribute large concentrations of animals.</td>
<td></td>
</tr>
<tr>
<td>6. The existing AMP is no longer meeting the management objectives set forth for this allotment.</td>
<td>6. Review existing AMP to meet the operator's needs to develop a system that will enhance livestock grazing use and other resource values.</td>
<td></td>
</tr>
<tr>
<td>7. Certain portions of this allotment have excessive sagebrush canopy, which reduces the amount of desirable forage available for both wildlife and livestock.</td>
<td>7. Improve forage quality through the implementation of various vegetative manipulations such as prescribed burning or ripping and reseeding (vegetative manipulations are described in this appendix).</td>
<td></td>
</tr>
<tr>
<td>8. Excessive soil erosion is occurring on certain portions of the allotment because of a lack of vegetative cover.</td>
<td>8. Improve soil stability on highly erosive soils by constructing improvement projects designed to provide watershed stability.</td>
<td></td>
</tr>
<tr>
<td>9. Continuous early spring grazing is resulting in stress to desirable forage species that require rest or regrowth opportunities during this critical growing period.</td>
<td>9. Limit the number of livestock on the allotment during the critical spring season to a level that will provide appropriate utilization objectives. These objectives will be developed in consultation and coordination with the affected permittees to meet the needs of both the operator and the affected resource.</td>
<td></td>
</tr>
<tr>
<td>10. Trailing requirements through this allotment have resulted in overutilization of route areas and the mixing of existing livestock.</td>
<td>10. Trailing will be authorized on existing stock trails consistent with the overall objectives set forth for the allotments affected.</td>
<td></td>
</tr>
<tr>
<td>11. Plant and animal pests have posed a problem to the livestock and vegetative productivity of the allotment.</td>
<td>11. Act in cooperation with other affected landowners and agencies to control concentrations of noxious weeds or pests.</td>
<td></td>
</tr>
<tr>
<td>12. Recreational activities by the public are resulting in gates being left open. This causes livestock to drift in and out of authorized areas.</td>
<td>12. Install cattle guards in various trouble locations to minimize the probability of livestock drifting.</td>
<td></td>
</tr>
<tr>
<td>13. Some of the vegetative sites in the allotment are producing well below the potential in both quality and quantity levels. Changes in grazing management alone will not constitute a response.</td>
<td>13. Restore productivity of these sites through the implementation of various mechanical treatments.</td>
<td></td>
</tr>
</tbody>
</table>
14. Through consultation, and coordination with the affected permittee, develop a system of rotating the feed locations throughout the allotment. Options also may exist to place the required supplemental material on private lands within the allotment, if fenced.

15. Monitor forage utilization by both wild horses and livestock to determine acceptable levels of both species. Supplement data with aerial reconnaissance of the wild horse herd areas to develop distribution patterns of the wild horse population.

16. In coordination with the Wyoming DEQ, increase abandonment compliance requirements to ensure that adequate reclamation is accomplished. Adjust livestock numbers to reflect available forage after mining claim abandonment.

17. Restrict ORV use to existing roads and trails in the affected areas.

### Table G-3 (Continued)

**PROBLEMS, CONFLICTS AND OPPORTUNITIES IN LIVESTOCK GRAZING MANAGEMENT**

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**Appendix G: Livestock Grazing Management**

**Problems, Conflicts and Opportunities in Livestock Grazing Management**

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</tbody>
</table>
Appendix G: Livestock Grazing Management

PROPOSALS FOR LIVESTOCK GRAZING MANAGEMENT BY ALTERNATIVE

Table G-4 lists allotment-specific proposals for range methods and treatments under each alternative.

Table G-5 shows the proposed stocking level for each allotment under each alternative.

PROCEDURES FOR RANGE IMPROVEMENT PROJECTS

Procedures and Regulations

The following is a discussion on the standard operating procedures and regulations that govern the development of range improvement projects in the planning area. A number of specific design features not mentioned here also may be incorporated in the construction of such projects; for example, a requirement for a specific color of fence post to minimize the impacts associated with visual quality. These types of mitigative specifications will be incorporated individually into a required environmental assessment.

The following procedures would be followed in the construction of all management facilities and the implementation of vegetative manipulations.

To ensure the protection of other resources that could be adversely affected, an environmental assessment would be required before the development and/or approval of any range improvement project proposed on public lands.

All range improvement projects involving surface-disturbing activities would be inventoried for prehistoric and historic features to comply with the National Historic Preservation Act of 1966, 36 CFR 800, and Executive Order 11593. All sites found during such inventories would be protected, where feasible. If buried sites were discovered during construction, operations would cease until such time as BLM could evaluate the discovery and determine the appropriate actions.

The construction or development of a range improvement project would be denied if the proposal would affect or jeopardize the continued existence of federally listed threatened or endangered plant or animal species and/or its habitat. Consultation and coordination with the USFWS would be required under such conditions to determine acceptable mitigating measures to avoid possible impacts.

The development of new range improvement projects or the maintenance of existing facilities within wilderness study areas would follow the guidelines set forth in the BLM’s Interim Management Policy and Guidelines for Land Under Wilderness Review (USDI, BLM 1979, 1983).

Specific schedules would be set for the construction of projects in critical wildlife areas such as winter ranges, fawning/calving areas, or strutting grounds to avoid possible stress of the species involved.

All actions would address the BLM’s visual resource management criteria in the project planning stages for activities that would affect the existing landscape, disturb the soils, or remove vegetation. This type of analysis would determine the amount of contrast that would exist between the proposal and the landscape so that actions required to reduce the visual impacts could be determined.

Cooperative agreements or range improvement permits would be required on all projects constructed on public lands so that maintenance responsibilities for those projects could be assigned.

Benefit/cost analysis would be conducted on all projects before approval to determine if there would be a positive economic return on investment.

Structural Projects

Fences

Fencing is one of many ways of controlling wild and domestic animals to achieve resource management objectives within specific areas. It is commonly used on range and forested lands to control domestic livestock, to exclude certain livestock and wildlife species from hazard, study, or regeneration areas, and to gain uniform distribution of livestock for proper utilization of the range or for protection of human and cultural values. Fencing also has been used in the past for the protection of riparian zones for restoration purposes.
TABLE G-4
PROPOSED RANGE METHODS AND TREATMENTS BY ALLOTMENT

<table>
<thead>
<tr>
<th>Allotment Number</th>
<th>Grazing Systems</th>
<th>Vegetation Manipulations</th>
<th>Structural Projects</th>
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<td>Spring Деfer</td>
<td>Rest-Rotate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burn</td>
<td>Burn &amp; Reseed</td>
<td>Reservoirs</td>
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<tr>
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<td>Chemical</td>
<td>Inter-seed</td>
<td>Division</td>
</tr>
<tr>
<td></td>
<td>Rip &amp; seed</td>
<td>Contour Furrow</td>
<td>Boundary</td>
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<td>Springs</td>
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<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Wells</td>
</tr>
</tbody>
</table>

**ALTERNATIVE A**

BLM funded projects would be limited to areas covered by an existing AMP.

- 1002  Approximately 2.5 miles of boundary fence would be constructed on the north end of the allotment.
- 1060  Approximately 3 miles of boundary fence would be constructed on the north end of the allotment.
- 1067  No projects would be proposed.
- 1073  Rest-rotation grazing systems would be implemented to provide rest during critical growing seasons.
- 1080  Approximately 1,989 acres of saline upland vegetation would be ripped and seeded. Contour furrowing would be done on about 540 acres.
- 3035  Approximately 3.5 miles of pipeline would be constructed for water distribution.
- 3052  No projects would be proposed.
- 3053  About 765 acres of sagebrush would be burned.

**ALTERNATIVE B**

<table>
<thead>
<tr>
<th>Allotment Number</th>
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<th>Vegetation Manipulations</th>
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TABLE G-4 (Continued)
PROPOSED RANGE METHODS AND TREATMENTS BY ALLOTMENT

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Alternative B

- Spring Ant-Burn
- Alaska Contour Fencing
- Wells

- Total acreage

- ALTERNATIVE C

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Total acreage

- ALTERNATIVE C

- Spring Ant-Burn
- Alaska Contour Fencing
- Wells

- Total acreage

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TABLE G-4 (Continued)

PROPOSED RANGE METHODS AND TREATMENTS BY ALLOTMENT

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1. 'Suggested stocking levels' means the number of WGF for the WGF program.
Appendix G: Livestock Grazing Management

Fences would be constructed according to the specifications outlined in BLM Manual Handbook H-1741-1 for the control of livestock and for the protection and enhancement of wildlife species and their habitats. These specifications consider areas of seasonal movement by big game species, big game habitat areas, critical wildlife habitat, wild horse range, and drainage crossings for the development of standards that would minimize effects on those resources.

An example of certain stipulations that could be applied is a given spacing of the strands and total height of the fence that will allow ease of movement by certain wildlife species. Variance of these requirements can be exercised by the authorized officer after consultation with the affected parties.

Water Developments

General

Water developments such as springs, stock ponds, reservoirs, catchments, pipeline systems, and wells are constructed to provide water sources for both domestic and livestock facilities. These facilities are used to support wildlife and range conservationists, and the affected permittees. BLM guidelines and specifications are followed in the construction of dams or earthwork-type activities.

Wells

The placement of a well is based on geological reports that predict the probability of success and determine the expected depth of drilling to reach the aquifer. All federal, state, and local regulations are observed in the development of groundwater facilities.

Pipelines

Wherever practical, pipelines are buried to a depth of approximately 12-18 inches to protect them from adverse weather conditions and surface activities. In cases where soil structures or terrain prevent this method, the pipeline is placed on the surface of the ground and made of a higher quality material to avoid or minimize the above-mentioned hazards. Most pipelines have water tanks located every half-mile along the routes.

Vegetative Manipulations

Prescribed Burning

Prescribed burning is generally an acceptable method of reducing the amount of sagebrush that has increased to an undesirable level. It would be initiated through consultation with the WGFD, BLM, the affected landowners, and other grazing permittees involved in the spring before perennial growth or in the fall after the desirable grasses have become dormant to achieve the best results. Burn plans that identify specific operational procedures would be developed before burning is carried out.

Ripping and Seeding

The purpose of ripping is to break up the existing soil structure to prepare the land for interseeding. Interseeding is considered an alternative to complete seedbed preparation when erosion hazards are too high, the preparation and costs of preseeding a bed are undesirable, or the overall objectives are to modify or restore rather than to replace the existing plant stand. The primary purpose of interseeding is to reestablish native plant communities in the highest, seasonal order than the existing ones and to raise overall range condition to fair or good in a relatively short time. Rip-planting operations are essential following interseeding. Closely regulated grazing may be required for several years to protect the young seedlings (which the grazing animals prefer) until stability and establishment have occurred.

Chemical Treatments

The application of chemicals for the control of noxious weeds and sagebrush would be cleared by the U.S. Department of Interior. Specific methods of applying chemicals on the ground would be used for the control of noxious weeds and the reduction of sagebrush canopies that have increased to undesirable levels. All applications of chemicals would be accomplished under the environmental constraints of the Big Horn Basin Designated Noxious Weed Treatment Program and the Northwest Area Noxious Weed Control Program. Only four herbicide formulations will be approved for use on public lands at this time: picloram, glysophate, 2,4-D and dicamba. Other formulations may be approved if the future if an acceptable "worst case analysis" is performed for the specific chemical. Water quality monitoring of treated areas will be established according to the criteria outlined in the Northwest Area Noxious Weed Control Program Final EIS.

Ripping and Seeding

The purpose of ripping is to break up compacted layers that are restricting root and moisture penetration. The depth of penetration depends on the depth of the restrictive layer, but it generally ranges from 10 to 36 inches. Because of the high costs associated with this method, this technique would be limited to responsive sites that will yield a high rate of return. A seed mixture would be selected to meet management objectives developed for the allotment.

RANGE MONITORING STUDIES

Purpose

The purpose of monitoring studies is to provide the information needed for making management decisions, determining the effectiveness of on-the-ground management actions, and evaluating progress toward meeting management objectives on high-priority allotments. Management objectives in the planning area are (a) to gather adequate data on all "A" and "M" category allotments, (b) to determine the effects of management actions on the range and its resources, and (c) to provide quantifiable data needed to support management decisions. All monitoring plans will follow BLM Manual 4400, Technical References 4400-1 through 4, Instruction Memo 87-236, and the Wyoming Monitoring Handbook (H-4425-1) as modified.

Methods

A formal evaluation of any allotment or management unit must examine the effects of consumptive uses in that area, such as livestock grazing, wild horses, and wildlife. A high degree of interdisciplinary coordination will ensure that multiple use principles are considered and that all interested and affected parties are involved in the development of the objectives. These objectives must be meaningful, specific, and measurable.

The monitoring studies established in specific allotments where wildlife-livestock conflicts have been identified will be designed to provide information for wildlife and range management personnel to determine actual problems or conflicts. At a minimum, information will be needed on actual use levels and forage utilization by each ungulate species involved. This will require close cooperation and specific input from the WGFD during the planning, implementation, and analysis of the monitoring studies.
Appendix G: Livestock Grazing Management

Data will be collected in areas identified in the McCullough Peaks Wild Horse Herd Area Management Plan (USDI, BLM 1985) during winter through aerial and ground observations. Actual numbers, distribution patterns, and utilization levels specific to the wild horses will be determined to provide feasible baseline data for determining impacts.

Monitoring

Monitoring plans will include consultation, cooperation, and coordination with range users both before and during the development of allotment monitoring studies. The most important objective is to develop trust, understanding, and a sound working relationship between BLM and the users. Range users can help with the monitoring plan by collecting ground data, making observations, and impart specific operational experience that the individual range specialist may lack.

Monitoring objectives for the state of Wyoming are consistent with those identified for the BLM in BLM instruction memorandum 86-706. In general, the instruction memorandum directs that adequate data be collected on all "I" and "M" category allotments to determine the effects of management actions on rangeland resources and to provide quantifiable data needed to support management decisions. Objectives for each specific allotment will be developed in conjunction with the range user and other interested parties. These specific objectives will be included in allotment monitoring plans that will be prepared in conjunction with allotment grazing plans.

The method, amount and intensity of monitoring established and conducted for each allotment will vary depending on category, resource values, and specific allotment objectives. High intensity monitoring will be implemented in allotments identified as top "I" priority. Low intensity monitoring studies will be carried out on the remaining lower priority "I" and "M" category allotments so that significant changes in current management or resource values can be detected.

High-intensity studies provide sufficient data to support decisions that establish grazing capacities, seasons of use, and the kind and number of grazing animals by allotment. Studies at this level of monitoring are those that determine actual use and forage utilization as well as climatic studies.

Annual production data will be collected to relate forage utilization levels to an annual amount of biomass. Trend studies will be used along with annual climatic data and information on actual use and forage utilization to analyze the effectiveness of the management decisions taken to achieve specific allotment objectives.

Low-intensity studies are those that detect undesirable changes in existing range condition that could warrant re-evaluation of the priority or category for that allotment. At a minimum, such studies include an allotment inspection and the completion of form WY 4120-2 (which indicates when the allotment was inspected) and form WY 4120-3 (on which the employee records consultation with the operator, vegetation condition, kind and location of livestock, range improvements and management practices, and other information noted). This document and monitoring will be required at least every five years. Actual use data will be submitted for all "I" and "M" allotments.

APPENDIX J

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

INTRODUCTION

Seven areas have been considered for possible designation as areas of critical environmental concern (ACECs) in this RMP/EIS. Five of these were discussed in the draft RMP/EIS: The Carter Mountain Alpine Tundra area, Chapman Bench, the Five Springs Falls area, Little Mountain, and Sheep Mountain Anticline. The locations of these areas are shown on maps 30 through 36 in the draft RMP/EIS. Two additional ACEC proposals are described for the first time in this Final EIS: the Clarks Fork Canyon proposed ACEC and the Wild- life Winter Support Habitat proposed ACEC.

To be designated an ACEC, an area must meet criteria for relevance and importance as mandated in 43 CFR 1610.7-2a. That legislation indicates that an area must possess "a significant historic, cultural, or scenic value; a fish and wildlife resource or other natural system or process; or natural hazard" (relevance) and that the value described must have "substantial significance and values" with "qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern," specifically when compared to like or similar resources (importance). Designation may be appropriate if qualities or circumstances are present that make a resource fragile, sensitive, rare, irreplaceable, endangered, threatened, or vulnerable to adverse change.

The special features of the five areas are described in the following sections. A more detailed report on the areas considered for designation is on file at the Cody Resource Area office.

CLARKS FORK CANYON PROPOSED ACEC

Introduction

Many reviewers of the draft RMP/EIS requested ACEC designation for the mouth of the Clarks Fork Canyon. These reviewers cited the canyon's highly scenic nature and the need to support a recommendation of the Shoshone National Forest that identified a portion of the Clarks Fork of the Yellowstone River for NWRs inclusion (see draft RMP/EIS, page 177). BLM has studied about 3,800 acres at the mouth of the Clarks Fork Cany- on for possible ACEC designation.

Relevance

The area around the mouth of the Clarks Fork Canyon contains a number of significant resources. These resources include the scenic flat iron or flyin buttress rock formations at the mouth of the canyon, peregrine falcon recovery habitat, and a portion of the Nez Perce National Historic Trail. These resources meet ACEC relevance criteria.

Importance

Scenic resources, comparable or better than those at the mouth of the Clarks Fork Canyon, can be found at Sheep Mountain Anticline north of Greybull, and along the west slope of the Bighorn Mountains. The Nez Perce Trail is of national significance, however, the one-quarter mile segment of the trail that would cross the proposed ACEC is not more significant than other portions of the trail. The peregrine falcon recovery habitat area in the mouth of the canyon does not have any greater significance than five other recovery areas in the planning area, or numerous other peregrine falcon recovery habitat areas that exist in the Greater Yellowstone Ecosystem.

Conclusions

While the mouth of the Clarks Fork Canyon contains several resources that are significant, these resources do not meet the importance criteria necessary for ACEC designation.
WILDLIFE WINTER
SUPPORT HABITAT
PROPOSED ACEC

Introduction

The WGFD and the Wyoming Wildlife Federation (WWF) proposed the designation of approximately 50,606 acres of overlapping elk, mule deer, and bighorn sheep crucial winter ranges (as delineated by the WGFD) as an ACEC. The objective of ACEC designation management would be to maintain the quality of overlapping crucial winter support habitat.

The proposed ACEC is located in the planning area along the Shoshone National Forest boundary—primarily east of the Bear-tooth Mountains, Bald Ridge, and Pat O’Hara Mountain, and in the regions of Rattlesnake, Sheep Rock, and along the Bighorn National Forest boundary with additional areas near Deer and Cottonwood creeks.

Relevance

The proposed ACEC is relevant in that it provides overlapping crucial winter support habitat of the North Fork Shoshone, Clarks Fork, and North Fork Shoshone herd units, mule deer of the Clarks Fork, northern North Fork Shoshone, southern North Fork Shoshone, and bighorn herd units of the Clarks Fork, and Bald Ridge and Wapiti Ridge herd units. Crucial winter ranges differ from the larger winter ranges for these populations in that the habitat on crucial winter ranges is necessary to maintain the core populations of these herd units during periods of severe winter weather. Such weather normally occurs two out of ten years.

Importance

The proposed ACEC is locally significant in that it is crucial winter support habitat for two and three big game ungulate species. However, the proposed ACEC does not appear to possess qualities of more than local significance. Examples of overlapping crucial winter ranges are prevalent throughout the western United States, and the environmental effects of management on these ranges (both the adverse and beneficial effects) would not extend beyond the limits of the Bighorn Basin.

CARTER MOUNTAIN ALPINE TUNDRA
PROPOSED ACEC

Introduction

Approximately 7,819 acres of federal land on Carter Mountain would be designated an ACEC. The objective of the proposed ACEC would be to protect areas of unique alpine tundra and fragile soils at elevations of 10,000 to 11,300 feet above sea level.

Relevance

Only limited scientific information is available regarding the ecological relationships of alpine soils, vegetation, and wildlife in the Absaroka Range and throughout alpine ranges in Wyoming. The Carter Mountain area is unique in that it remains in essentially pristine condition, although some disturbance has occurred in the past. This juxtaposition of disturbed and undisturbed alpine tundra allows a unique opportunity to study the effects of disturbance on alpine soils, vegetation, and wildlife.

Importance

The Carter Mountain alpine tundra area contains five elements found in alpine habitats: cliffs and ledges, talus and scree, fell-field and felsenmeer, meadow and turf, and standing and running water. The area is unusual for its absence of typical alpine associates including Papaver, Cyanthillium, Thalictrum alpinum, Campanula uniflora, Heuchera villosa, Pulsatilla patens, and Thalictrum alpinum.

CYPRESSMOUTH (Cupressocyparis sargentii) and four rare peripheral taxa (Campanula uniflora, Heuchera villosa, Pulsatilla patens, and Thalictrum alpinum). The area provides regionally important recreational opportunities. It provides yearlong and crucial seasonal habitat for several big game species.

Conclusion

The Carter Mountain alpine tundra area meets relevance and importance criteria for ACEC designation.

CHAPMAN BENCH
PROPOSED ACEC

Introduction

Approximately 15,400 acres on Chapman Bench would be designated an ACEC. The management objective would be to maintain and improve habitat for nesting populations of long-billed curlew and mountain plover. Management in this area would be designed to provide optimum wildlife-related opportunities.

Relevance

The long-billed curlew and the mountain plover are candidate species for federal protection under the Endangered Species Act of 1973, as amended (Federal Register 50). The long-billed curlew also is listed by the Wyoming Game and Fish Department as a species in need of special management in Wyoming because of declining numbers and restricted distribution (WGFD 1985)

Importance

The Chapman Bench is inhabited by (a) a significant breeding concentration of long-billed curlew (a federally listed candidate species and a state listed species in need of special management), and (b) breeding population of mountain plover (a federally listed candidate species). The long-billed curlew and mountain plover are protected under the Migratory Bird Treaty Act of 1918, as amended. Both species also are protected as rare species in Wyoming.

Coyote Resource Area personnel conducted a survey in 1986 for breeding long-billed curlews and in the proposed ACEC. This survey followed persistent reports during the last decade of curlews in this area. Records of this survey are on file at the Coyote Resource Area office. From this survey it was determined that the proposed ACEC was used by breeding long-billed curlews and mountain plovers. Although the survey was not designed to determine breeding densities, resource area personnel estimated that the proposed ACEC had 20 curlew breeding pairs and at least five plover breeding pairs in 1986. On the basis of the survey, a review of the professional literature and consultations with regional biologists familiar with the current status of each of these birds, BLM personnel concluded that a highly significant curlew breeding population is present on Chapman Bench.

The long-billed curlew is endemic to North and Central America and the mountain plover to North America. (Graul & Webster 1976, Howe 1983.) Both species breed throughout the prairie regions of central North America during the past century; however, the species’ breeding ranges have been substantially reduced due to habitat losses caused by cultivation and to a lesser extent by dairying activities and market hunting. Loss of food sources through chemical insect control also has reduced the breeding ranges. (Graul & Webster 1976, McCallum, Graul, and Zaccagnini 1977, Allen 1980, Renaud 1980, Dinsmore 1983, Howe 1983.)

Cultivation has eliminated the long-billed curlew from the eastern portion of its former range (Howe 1983). Curlews no longer occur in Illinois, Wisconsin, Iowa or Minnesota (McCalum, Graul, and Zaccagnini 1977). Renaud (1980) stated that curlews were rare or absent in large areas of Saskatchewan that were under cultivation. In Wyoming, curlews have experienced “drastic population declines” in specific areas, but the extent and causes of these declines are unknown (Cochrane & Oakleaf 1982). Agricultural activities also have eliminated mountain plover breeding in the Dakotas and Kansas (Graul & Webster 1976).

The Chapman Bench is inhabited by (a) a significant breeding concentration of long-billed curlew (a federally listed candidate species and a state listed species in need of special management), and (b) breeding population of mountain plover (a federally listed candidate species). The long-billed curlew and mountain plover are protected under the Migratory Bird Treaty Act of 1918, as amended. Both species also are protected as rare species in Wyoming.

Coyote Resource Area personnel conducted a survey in 1986 for breeding long-billed curlews and in the proposed ACEC. This survey followed persistent reports during the last decade of curlews in this area. Records of this survey are on file at the Coyote Resource Area office. From this survey it was determined that the proposed ACEC was used by breeding long-billed curlews and mountain plovers. Although the survey was not designed to determine breeding densities, resource area personnel estimated that the proposed ACEC had 20 curlew breeding pairs and at least five plover breeding pairs in 1986. On the basis of the survey, a review of the professional literature and consultations with regional biologists familiar with the current status of each of these birds, BLM personnel concluded that a highly significant curlew breeding population is present on Chapman Bench.

The long-billed curlew is endemic to North and Central America and the mountain plover to North America. (Graul & Webster 1976, Howe 1983.) Both species breed throughout the prairie regions of central North America during the past century; however, the species’ breeding ranges have been substantially reduced due to habitat losses caused by cultivation and to a lesser extent by dairying activities and market hunting. Loss of food sources through chemical insect control also has reduced the breeding ranges. (Graul & Webster 1976, McCallum, Graul, and Zaccagnini 1977, Allen 1980, Renaud 1980, Dinsmore 1983, Howe 1983.)

Cultivation has eliminated the long-billed curlew from the eastern portion of its former range (Howe 1983). Curlews no longer occur in Illinois, Wisconsin, Iowa or Minnesota (McCalum, Graul, and Zaccagnini 1977). Renaud (1980) stated that curlews were rare or absent in large areas of Saskatchewan that were under cultivation. In Wyoming, curlews have experienced “drastic population declines” in specific areas, but the extent and causes of these declines are unknown (Cochrane & Oakleaf 1982). Agricultural activities also have eliminated mountain plover breeding in the Dakotas and Kansas (Graul & Webster 1976).
Appendix J: Areas of Critical Environmental Concern

It appears to be an established and historic curlew nesting area.

It lies beyond the published nesting range of the mountain plover.

The Secretary of the Interior has identified the two species in the Chapman bench area as having the potential of being listed as threatened or endangered. No state-sensitive species have been formally identified in Wyoming.

These species also meet the criteria of BLM Manual 6840. BLM Policy is to ensure, within the framework of FLPMA, that the crucial habitats of sensitive species will be managed and conserved to minimize the need for listing of these species by federal or state governments in the future. The ACEC designation also would be consistent with WGFD objectives for species in need of special management attention.

A review of the scientific literature and professional consultations determined the existence of only one other known long-billed curlew nesting concentration in Wyoming. During the Chapman Bench area was discovered, Cochrane & Oakleaf (1982) wrote: "Curlew now occur in concentrated numbers in Wyoming near Daniel, in Sublette County, and in highly dispersed and isolated pairs in the remainder of the state." They classified only the Daniel population as abundant or common in Wyoming; populations in the remainder of the state were classified as uncommon.

Cochrane (1983) stated that the Daniel population declined between 1963 and 1983. Wyoming records for all published and anecdotal sources from 1940 through 1981 showed only two records of long-billed curlew nests outside the Daniel area. At a beach of the Wyoming Game and Fish Department's computerized Wildlife Observation System found in one additional record of a 1982 nest on private land 12 miles south of the proposed ACEC, but no other evidence of nesting, territorial behavior, or courtship behavior outside the Daniel area. The USFWS surveyed 143 randomly selected quarter-sections in grassland habitats in eastern Wyoming for breeding birds between 1976 and 1978. Only six curlews in three locations were found in that survey.

Surveys in three areas of the Daniel population provided density estimates of 4.2, 1.6, and 0.9 curlews per 100 hectares. Although no density surveys were made on Chapman Bench, the proposed ACEC is estimated to support 0.8 to 1.1 curlews per 100 hectares. Although curlews are concentrated in the western portion of the proposed ACEC where densities would be significantly higher, the Daniel population covers a significantly greater area.

Allen (1980) determined that nesting long-billed curlews return to the same nest territories in subsequent years, and Remond and Jenni (1982a) reported chicks returning to the natal site to breed. This information and the history of curlew sightings on Chapman Bench during the past decade indicate that the proposed ACEC is a traditional curlew nesting area.

Grail & Webster (1976) concluded that moun- taneous breeding only in southern Montana, Wyoming, and Colorado. In fact, Chapman Bench is west of the published breeding range (Dinsmore 1983). Grail & Webster (1976) said that prairie plovers occurred only in isolated populations in Montana and Wyoming, and that only 5% of this area contained breeding prairie plovers.

Conclusions

The Chapman Bench area meets relevance and importance criteria for ACEC designation because of its significant breeding concentration of long-billed curlews and mountain plovers.

FIVE SPRINGS FALLS
PROPOSED ACEC

Introduction

Approximately 160 acres of federal land at Five Springs Falls on the West Slope of the Bighorn Mountains would be designated an ACEC. The management objective would be to protect existing populations of the following four near-endemic rare and sensitive plant species by providing a prescription for the management of recreation and surface-disturbing activities so as to prevent loss of sensitive plant life and preserve visual aesthetics:

Engelmannia salsoloides (No known common name)

Pteridium crassifolium (Cray beardtongue)

Salix tristis (Princes plum var. tomentosa)

Sulphur cinemon (Sulphurina)

Relevance

The Five Springs Falls area provides unique habitat for four plant species that are known to occur only in Wyoming and one other state. This unique habitat is comprised of vertical cliff walls that are kept moist by spray from the waterfall. The BLM administers a campground on the eastern edge of the proposed ACEC.

Importance

The plant species for which special management is proposed are known to occur only in Wyoming and one other state. A developed recreation site and trails exist near and within the proposed ACEC boundary. This area is used yearlong by elk and mule deer, and it is inhabited by various predators, raptors, small mammals, and songbirds. Current recreation and habitat management activities at this site include federal land hiking trails, photography and big game hunting.

LITTLE MOUNTAIN
PROPOSED ACEC

Introduction

Approximately 20,510 acres of BLM-administered public land on Little Mountain would be designated an ACEC. The management objective would be to protect and manage important cave resources, cultural, and paleontological values. Another purpose would be to provide better protection to the public from hazards associated with former uranium mining activities.

Some people go there to do research on cultural or paleontological resources, and there is some recreational use of the caves.

Relevance

The Little Mountain proposed ACEC contains karst topography, paleontological resources, and cultural resources. As mentioned previously, it also contains a potential hazard from previous uranium mining activities. Management action is needed to protect and prevent inappropriate damage to the resources and to protect life and safety from hazardous mine shafts and tailings.

The karst topography, paleontological resources, and cultural resources and the hazard from previous uranium mining all are important. The resources are interrelated within the proposed Little Mountain ACEC, and all of them enhance the importance of the area.

The karst topography has given researchers and recreational users vast subterranean areas to study and explore. Openings to these caves trapped animals, leading to preservation of a fossil record of previous inhabitants. Sediments that washed into the caverns contained uranium, which was mined in the early 1950s. Unfortunately, the hazardous tailings and open mine shafts remain.

Aboriginals occupied the area for approximately 11,000 years, leaving a vast storehouse of information regarding prehistoric and protohistoric adaptive strategies.

The remoteness of the Little Mountain area has helped to protect its resources. Few people climb miners and ranchers venture into the area; however, some people go there to do research on cultural or paleontological resources, and there is some recreational use of the caves.

Importance

The mine shafts and tailings from uranium mining are a source of surface and groundwater contamination. Any action that would alter the existing karst topography could detract significantly from the recreational and scientific value of the caves and could result in loss of cultural resources.

Appendix J: Areas of Critical Environmental Concern
Conclusions
The Little Mountain area meets relevance and importance criteria for ACEC designation because of its unique cave resources, paleontological and cultural values, and because of hazards to human life and safety in the area.

SHEEP MOUNTAIN ANTICLINE PROPOSED ACEC

Introduction
Approximately 12,285 acres of BLM administered public lands in the Sheep Mountain Anticline area would be designated an ACEC. The management objective would be to protect the unusual geologic features of the area and enhance opportunities for education.

Relevance
The relevant resource in the Sheep Mountain Anticline area is the actual geologic structure, the Sheep Mountain Anticline. This anticline is significant and relevant because it represents 300 million years of the history of the earth’s crust. The area contains an unusual exposure of a topographically expressed anticline where both the constructive and destructive forces that shape the earth can be observed. Sheep Mountain Anticline is one of the best exposures of its kind. It is used as an example in many geologic textbooks to explain and illustrate elementary geologic principles concerning structural geology and stratigraphy. This area is relevant because it has both scenic and scientific values.

Importance
The Sheep Mountain Anticline is more than locally significant. Well-preserved exposures of this kind are considered rare. The combination of topographic expression, exceptionally good rock exposures, and a deep canyon cut through the middle of the structure provides an unusual opportunity to view in detail the geologic processes which have worked to form the anticline (USDI, NPS). The Sheep Mountain Anticline area offers opportunities for fishing, trapping, big game hunting, boating and ORV use, sightseeing, hiking, rock hounding, and spelunking.

Two caves, Cave of the Proud Eagle and Spence Cave, are on private land. It is rumored that another cave also exists in this immediate area. These caves have been documented to contain flowing thermal springs. Thermally active caves such as these are rare and geologically important because they could provide information about the formation of other caves that no longer contain flowing springs. In addition, the depositional processes in thermal spring caves may provide information on the formation of some ore bodies (Egemen, 1981).

Conclusions
The Sheep Mountain Anticline area meets relevance and importance criteria for ACEC designation because of the opportunities it offers for the study of geology.

APPENDIX K
OIL AND GAS OPERATIONS

INTRODUCTION
Most of the text of this appendix appeared in documents produced by the Rock Springs District Office of the BLM. We have adapted a few paragraphs to reflect the situation in the Cody Resource Area, but the diagrams and most of the text were graciously provided by the Rock Springs District.

GEOPHYSICAL EXPLORATION
Oil and gas can be discovered by either direct or indirect exploration methods. The mapping of rock outcrops, seeps, and borehole data are examples of direct methods. Indirect methods include seismic, gravity, and magnetic surveys; these methods are described in this appendix.

Gravity Surveys
Gravitational prospecting detects microvariations in gravitational attraction caused by the differences in the density of various types of rock. Data derived from gravity surveys are used to generate anomaly maps from which faults and general structural trends can be interpreted. Gravity surveys are generally not considered definitive due to the many data corrections required (e.g., terrain, elevation, latitude, etc.) and the poor resolution of complex subsurface structures. The instrument used for gravity surveys is a small portable device called a gravimeter. Several types of gravimeters have been developed and virtually all can be easily carried by an individual. Generally, measurements are taken at many points along a linear transect and the gravimeter is transported either by backpack, helicopter, or off-road vehicle (ORV). The only surface disturbance associated with gravity prospecting is that caused by the ORV, if used.

Seismic Reflection Surveys
Seismic prospecting is the best and most popular indirect method currently utilized for locating subsurface structures which may contain oil and/or gas. Seismic energy (shock waves) is induced into the earth using one of several methods. As these waves travel downward and outward they encounter various strata, each having a different seismic velocity. As the wave energy encounters the velocity interface between stratigraphic layers where the lower stratum is of lower velocity some of the seismic energy is reflected upward. Sensing devices commonly called geophones are placed on the surface to detect these reflections. The geophones are connected to a data recording truck which stores data on magnetic tape. The time required for the shock waves to travel from the shot point down to a given reflector and back. The average velocity for the section between the surface and a given reflector must be
estimated if no bore hole seismic data is available. This very specific information is the source of many errors in the seismic interpretation of wildcat areas. Expansive data is available today, which an explorationist can use to initiate the initial seismic energy into the earth. All methods require preliminary surveying and laying of geophones.

The thumper and vibrator methods pound or vibrate the earth to create a shock wave. Usually four large trucks are used, each equipped with vibrate padds (about four-foot square). The pads are lowered to the ground and vibrators on all trucks are triggered electronically from the recording truck. Information is recorded and then the trucks move forward a short distance and the process is repeated. Less than 50 square feet of surface area is required to operate the equipment at each test site.

The drilling method utilizes truck-mounted drills which drill small-diameter holes to depths of 100 to 200 feet. Four to twelve holes are drilled per mile of line. Usually, a 50-pound charge of explosives is placed in the hole, covered, and detonated. The detonated explosives send energy waves below the earth's surface which are reflected back to the surface from various subsurface rock layers. The holes are drilled in a linear fashion, forming a line that can be many miles in length. In rugged topography, a portable drill is sometimes carried in by helicopter. Charges are placed in the unmounted operation. A portable thumper is used to carry the charges and place the charges on wooden boards or logs so above the ground. Charges are used on 2 or 5 pounds. Usually, 10 charges in a line on the ground are detonated at once. In areas where there is little known subsurface data, a series of short seismic lines may be required to determine the regional dip and strike of subsurface formations. After this, seismic lines will be aligned relative to the regional structure to make the seismic interpretation more accurate. The seismic sensors and energy source are located along lines on a one-to-two-mile grid, and the instrument may be a fairly close spacing. The lines can often be changed one crossing a one-mile grid before the results will significantly affect the investigation program.

A typical drilling seismic operation may utilize 10 to 15 men operating six to eight vehicles. Under normal conditions, three to five miles of line can be drilled in a day. Using the explosive method, vehicles used for a drilling program include several heavy truck-mounted drill rigs, water trucks, a computer recording truck, and several light pickups for the surveyors, shot hole crew, geophone crew, permit man, and party chief. Public roads and existing private roads and trails are used. Off-the-country tracks are also necessary. Motor graders and/or dozers may be required to provide access to remote areas. Several trips a day are made along a seismic line; this usually establishes a well-defined two-track line of water or dirt, when needed, is usually obtained from private landowners or local city officials (USD 1981a).

Geophysical Management (Permitting Process)

Geophysical operations on and off an oil and gas lease area are reviewed by the federal surface management agency.

The responsibilities of the geophysical operator and the BLM District Manager during geophysical operations are as follows.

1. Geophysical Operator - The operator is required to file, in person or by mail, a "Notice of Intent to Conduct Oil and Gas Exploration Operations" for all operations on public lands administered by BLM Standard forms (WY-04-3045-6) for this purpose are available in all BLM District Offices. The notice includes maps showing the location of the line, and all access routes, and must be filed in the BLM Resource Area Office before operations begin.

2. Geophysical Operator - The operator is also required to be bonded. A copy of the bond or other evidence of satisfactory bonding shall accompany the "Notice of Intent." Planstaking of holes shall include a nationwide or statewide oil and gas bond with a primary term of five years, surety bond, or a $5,000 individual surety bond filed with the BLM District Manager. Once the Notice of Intent has been filed, a prework conference or field inspection (if required) is conducted. Any special written instructions, orders, or approvals that may be given by the area manager at this prework conference must be complied with by the operator one mile on a one-mile grid before the results will significantly affect the investigation program.

Surface disturbing activities, such as bulldozing, require written approval by the area manager. Operators may be required to submit an archeological survey report if disturbance is determined. The operator is required to comply with instructions and orders issued to close an area. As proposed in the Federal Onshore Oil and Gas Leasing Reform Act of 1987, all oil and gas leases are to be issued competitively by oral bid at lease sales, which will be held at least quarterly. Appropriate stipulations, as listed in appendix B, are added to leases for resource protection prior to lease sale.

Any changes in the original Notice of Intent must be submitted in writing to the area manager. Written approval must be secured before activities proceed.

When operations are completed, the operator is required to file a Notice of Completion of Geophysical Exploration, after any required clean-up work is completed.

2. BLM Area Manager - The area manager is required to contact the operator immediately after the Notice of Intent is filed and explain the terms of the Notice, including the operating procedures to be followed, all current laws, and all BLM administrative requirements. A prework conference or field inspection of the written instructions or orders given to the operator. The area manager is responsible for the examination of recorded sales and the development of appropriate surface protection and reclamation measures.

Final inspection following filing of the Notice of Completion is also required of the area manager.

State Standards

In Wyoming, the operator is required to register with the State Standards Board for plugging shot holes, personnel safety, etc., will be followed.

Mitigation

Seasonal restrictions are imposed to reduce conflicts with wildlife, watershed, and buffer areas. The most critical management practice is compliance monitoring during and after seismic activity. Compliance inspections during the operation ensure that stipulations are being followed. Compliance inspections upon completion of work ensure that the lines are clean and the drill hole is properly plugged.

OIL AND GAS LEASING

The Mineral Leasing Act provides that all public lands are open to oil and gas leasing unless a specific state law is enacted to close an area. As proposed in the Federal Onshore Oil and Gas Leasing Reform Act of 1987, all oil and gas leases are to be issued competitively by oral bid at lease sales, which will be held at least quarterly. Appropriate stipulations, as listed in appendix B, are added to leases for resource protection prior to lease sale.

Public notice of the available lands and the additional stipulations are provided 45 days prior to lease sale and any plan of operation is filed with a primary term of five years. Leasing is prohibited on wilderness study areas and lands subject to federal or state protection.

Leases that receive either no bid or less than the minimum acceptable bid ($2 per acre) shall be offered as a noncompetitive lease (previously known as an over-the-counter (OTC) lease) for a period not to exceed 24 months. These leases are offered to the first qualified person to fill out a lease application, and upon payment of the application and first-year rental fees. Noncompetitive leases are issued with a primary term of 10 years.

Rental on nonproducing leases, competitive or noncompetitive, is $1.50 per acre per year for the first two years and $10.00 per acre after that. Royalties (12%) are paid in lieu of rental on producing leases, and half of the royalties are returned to the state of Wyoming.

DRILLING PERMIT PROCESS

A federal lessee or operator is governed by procedures set forth by the Onshore Oil and Gas Operations Policy of the Bureau of Land Management. Federal and Indian Oil and Gas Leases, issued under 43 CFR 3184, Operating Order No. 1 lists the following as the required points to be followed by the lessee or operator: notice of staking (NOS), application for permit to drill (APD), and completion of the operation.

The most critical management practice is compliance monitoring during and after seismic activity. Compliance inspections during the operation ensure that stipulations are being followed. Compliance inspections upon completion of work ensure that the lines are clean and the drill hole is properly plugged.

Notice of Staking (NOS) - After the company makes the decision to drill a well, they must decide whether to submit an NOS or application for permit to drill (APD). The NOS consists of an outline of what the company intends to do including a location map and a sketch of the site plan. The NOS is then used as a document to review any conflicts with known critical resource values, and also used as the basis for the inspection to provide the preliminary data to assess what additional items are necessary to complete the APD.

2. Application for Permit to Drill (APD) - The operator or lessee may submit a completed APD in lieu of notice of staking, but in either case no surface activity is conducted in con-
juncture with the drilling until the APD is approved by the BLM.

If the APD option is used, an APD is submitted to the BLM and a field inspection is held with the operator and any other interested party. The purpose of the presite field inspection is to evaluate the operator’s plan, to assess the situation for possible impacts (surface and subsurface), and to formulate resource protection stipulations. To lessen environmental impacts, a site may be moved, reoriented, or redimensioned, within certain limits, at the presite inspection. The proposed access road may also be rerouted (USDI 1981a). If necessary, site-specific mitigations are added to the APD for protection of surface and/or subsurface resource values in the vicinity of the proposed activity.

The BLM is responsible for preparing environmental documentation necessary to satisfy the National Environmental Policy Act requirements and provide any mitigation measures needed to protect the affected resource values.

Consideration is also given to the protection of ground water resources. Plugging and abandonment procedures include measures to protect good quality ground water from contamination by hydrocarbons or poorer quality water. Drilling procedures for new wells also address ground water protection.

When final approval is given by the BLM, the operator may commence construction and drilling operations. Approval of an APD is valid for one year. If construction does not begin within one year, the stipulations must be reviewed prior to approving another APD (USDI 1981a).

**Surface Disturbance Associated With Exploratory Drilling**

Upon receiving approval to drill the proposed well, the operator moves construction equipment over existing roads to the point where the access road will begin (figure K-1). Generally, the types of equipment include dozers (track-mounted and rubber-tired), scrapers, and motor-graders. Moving equipment to the construction site requires moving several loads (some overweight and overwidth) over public and private roads. Existing roads and trails are improved in places and occasionally culverts and cattleguards are installed if required.

The length of the access road varies. Generally the shortest feasible route is selected to reduce the haul distance and construction costs. Environmental factors or the landowner’s wishes may dictate a longer route. In rough terrain, the type of construction is sidecasting (using the material taken from the cut portion of the road to construct the fill portion); slightly less than one-half of the road bed is on a cut area and the rest is on a fill area. Roads are usually constructed with a 18-foot-wide running surface (in relatively level terrain). Soil texture, steepness of the topography, and moisture conditions may dictate surfacing the access road in some places but generally not for the entire length. The total acreage disturbed for each mile of access road constructed varies significantly with the steepness of the slope (USDI 1985b).

Well location construction requires that all soil material suitable for plant growth be removed from areas to be disturbed and stockpiled in a designated area. Sites on flat terrain usually require little more than removing the topsoil material and vegetation. Drilling sites on ridge tops and hill-sides are constructed by cutting and filling portions of the location. The majority of the excess cut material is stockpiled in an area that will allow it to be easily recovered for rehabilitation. It is important to confine extra cut material in stockpiles rather than cast it down hillsides and drainages where it cannot be recovered for rehabilitation.

The amount of level surface required for safely assembling and operating a drilling rig varies with the type of rig, but averages 300 feet by 350 feet. Figure K-2 illustrates a typical well location layout. At least 25 feet is normally required to be on an area of cut instead of fill, between the drill point and the outer edge of the drilling platform. This ensures that the foundation of the drilling derrick is on solid ground and prevents it from leaning or toppling due to settling of uncompacted soil.

In addition to the drilling platform, a reserve pit is constructed, usually square or oblong, but sometimes in another shape to accommodate topography. Generally, the reserve pit is 8 to 12 feet deep, but may be deeper to compensate for smaller length and width or deeper drilling depths.

Depending on the relation of the location to natural drainages, it may be necessary to construct water bars or diversions to control runoff. The area disturbed for construction and the potential for successful revegetation depends largely on the steepness of the slope.

Usually drilling activities begin within a week or two after the location and access road have been constructed. The drilling rig and associated equipment are moved to the location and erected. Moving a drilling rig requires moving 10 to 25 truck loads (some over legal weight and height) of equipment over public highways and private
PRELIMINARY INVESTIGATION
(Unknown Geologic Structure)
Preliminary investigations are carried out over large areas from aircraft and on the ground.

EXPLORATION
If the preliminary investigations indicate geologic structures may contain oil and gas, a lease is obtained and an exploratory well is drilled.

DEVELOPMENT
If oil and gas are discovered during the exploration phase and recovery is economically feasible, the field is developed for production.

PRODUCTION
The production phase involves operation and maintenance of the field and recovery of oil and gas.

ABANDONMENT
When the field is abandoned, equipment is removed, wells are plugged, and the surface is reclaimed.

Airborne Surveys
Surface Surveys
Geochemical Surveys
Stratigraphic & Other Mapping
Geophysical Surveys
Explosive Method
Thumper Method
Vibrator Method
Gravity & Other Methods
Geologic Surveys

Wildcat Well Drilling
Access Roads
Camp & Buildings (Remote Areas)

Development Drilling
Access Roads
Pipelines
Utility Lines
Separators
Storage Tanks
Camp & Buildings

Continued Drilling & Development of Field
Pressure Maintenance System
Disposal of Waste
Secondary & Tertiary Recovery System
Communication & Production System
Communities

Equipment, Buildings & Facilities Removal
Field Cleanup
Well Abandonment & Plugging
Eliminate Hazard
Surface Reclamation
Landscaping
Reseeding
Other Erosion Control

Figure K-1
SEQUENCE OF OPERATIONS IN AN OIL AND GAS FIELD
roads. The derrick when erected is approximately 160 feet high.

Water for drilling is hauled to the rig storage tanks or transported by surface pipeline. Water sources are usually rivers, wells, or reservoirs. Occasionally, water supply wells are drilled on or close to the site. The operator must obtain a permit from the Wyoming State Engineer for the use of surface or subsurface water for drilling. When BLM holds the water permits for surface water (stock ponds), BLM must also approve such use. When drilling commences, and as long as it progresses, water is continually transported to the rig location. Approximately 40,000 barrels or 1,680,000 gallons of water are required to drill an oil or gas well to the depth of 9,000 feet. More water is required if the underground formations are fractured enough to permit water to escape into them (lost circulation zone) (USDI 1981a).

Issuance of Rights-of-Way
Right-of-way are required for all facilities, tank batteries, pipelines, truck depots, powerlines, and access roads that occupy federally owned land outside the lease or unit boundary. When a third party (someone other than the oil or gas company and the federal government) constructs a facility or installation on or off the lease, a right-of-way is also required.

Drilling Operations

Rotary Drilling

Starting to drill is called "spudding in" the well. Initially drilling usually proceeds rapidly mainly due to the incompetent (or soft) nature of shallow formations. Drilling is accomplished by rotating special bits under pressure. While drilling, the rig derrick and associated hoisting equipment bear a great majority of the drill string’s weight (figure K-3). The weight on the bit itself is generally a small fraction of the total drill string weight. The combination of rotary motion and weight on the bit causes rock to be chipped away at the bottom of the hole. The rotary motion is created by a square or hexagonal rod, called a kelly, which fits through a square or hexagonal hole in a large turntable, called a rotary table. The rotary table sits on the drilling rig floor and as the hole advances, the kelly slides down through it. When the kelly has gone as deep as it can, it is raised, and a piece of drill pipe about 30 feet in length is attached in its place. The drill pipe is then lowered, the kelly is attached to the top of it, and drilling recommences. By adding more and more drill pipe, the hole can steadily penetrate deeper (USDI 1981a).

Drilling mud is circulated through the drill pipe to the bottom of the hole, through the bit, up the bore of the well, through a screen which separates the rock chips, and into holding tanks from which it is pumped back into the well. The mud is maintained at a specific weight and thickness to cool the bit, reduce the drag of the drill pipe on the sides of the well hole, seal off any porous zones, contain formation fluids to prevent a blowout or loss of drilling fluid, and bring the rock chips to the surface for disposal. Various additives are used in maintaining the drill mud at the appropriate viscosity and weight. Some of the additives are caustic, toxic, or acidic, but these hazardous additives are used in relatively small amounts during drilling operations.

Eventually, the bit becomes worn and must be replaced. To change bits, the entire string of drill pipe must be pulled from the hole, in sections usually about 90 feet long, until the bit is out. The bit is replaced and then the drill string is reassembled and lowered into the hole, section by section, and drilling is started again. The process of removing and reinserting the drilling string uses much of the time required in drilling.

Drilling operations are continuous, 24 hours a day and 7 days a week. The crews usually work three 8-hour shifts or two 12-hour shifts a day. Pickup or cars are used for workers’ transportation to and from the sight.

Upon completion of the drilling, the equipment is removed to another location. If oil or gas is not discovered in commercial quantities, the well is considered dry. The operator is then required to follow state and BLM policy procedures for plugging a dry hole. The drill site and access roads are rehabilitated in accordance with the stipulations attached to the approval of the well site (USDI 1981a).

Casing

Various types of casing are placed in the drilled hole to enhance hole integrity. Casing is a string of steel pipe which is comprised of many lengths (about 40 feet long) of individual pipe which are "screwed" together. Casing is cemented into the well to protect against fluids or rock entering the well bore.

Surface casing which is properly set and cemented also protects surface aquifers from being contaminated by drilling and production operations. Surface casing should be set to a depth greater than the deepest fresh water aquifer.
which could reasonably be developed. Fresh water may exist at greater depths, but these aquifers are not normally considered to be important for oil or gas production.

Surface casing is large enough to allow subsequent lengths of smaller casing to be set as the well is drilled deeper. Cement is placed in the annulus of the surface casing from casing shoe to ground level. That is, the entire space between the outside of the casing and the borehole wall is filled. Generally only the bottom few hundred feet of intermediate or production casing is cemented which often leaves several thousand feet of open hole behind some casing strings. Casing in open hole (uncemented annulus) is not considered adequate to protect zones of fresh water or minerals from contamination. The annulus must be properly filled with cement to provide adequate protection from inter-zonal migration.

Currently, the operator is only required to cement off "hydrocarbon bearing zones." Generally, operators define hydrocarbon bearing zones to be those zones which produce enough oil or gas to make the well economic. In some cases, some hydrocarbon bearing zones are not cemented. Production casing or liner is intended to provide a conduit for the production of oil and gas so that little or no product is lost in "up-hole zones."

Completion of a well calls for the installation of steel casing, which is cemented in, to provide stability and to protect specific underground zones. The casing is perforated into the zone or structure containing the oil or gas. The equipment installed on the casing of a producing well consists of various valves and pressure regulators which are used to control the oil or gas flow to production facilities.

Pipelne quality gas at the wellhead requires a minimum of processing equipment. As the quality of gas decreases with the increased presence of water, dissolved solids, or liquid hydrocarbons, the amount of processing equipment increases. Water or liquid hydrocarbons in the gas are removed before the gas is mixed with other gas, usually at the wellhead. If liquid hydrocarbons are present, storage facilities (tank batteries) are usually required to store the liquid hydrocarbons for eventual disposal.

Oil wells can be completed as flowing (those wells with sufficient underground pressure to raise the oil to the surface) or if the pressure is inadequate, they are completed with the installation of pumps, usually pumpjacks. Pumpjacks come in a variety of sizes, the larger ones reaching a height of 30 to 40 feet. Pumps are powered by internal combustion engines or electric motors. Fuel for the engines may be casinghead gas or propane.

Wyoming law prohibits the flaring or venting of natural gas. Exceptions are noted in the Wyoming Oil and Gas Commission regulations:

1. During testing of a new well, or 2) when the amount of gas produced with the oil is so small that pipeline construction is not practical. Otherwise, if a well produces both oil and gas, provisions for shipping the gas must be made before oil production can continue.

The production equipment (heater-treater, holding facility for production water (if any is present), and tank battery) are either placed on a portion of the location (on cut rather than fill) or located a short distance from the wellhead along the access road. Production facilities are usually painted black, silver, or with company colors, unless otherwise specified. The heater-treater and tanks are usually surrounded by earthen dikes to contain accidental spills. Either all the facilities may be fenced, or only the production water pit may be fenced (USDI 1981a).

Oil and Gas Exploratory Units

Surface use in an oil or gas field may be affected by unitization of the leaseholds. In areas of federally owned minerals, an exploratory unit is formed before a wildcat exploratory well is drilled. The boundary of the unit is based on geologic data. The developers of the unit can enter into an agreement to develop and operate as a unit, without regard to separate leaseholdings. Costs and benefits are allocated according to agreed-upon terms.

Unitization reduces the surface use requirements because all wells are operated as though on a single lease. Duplication of field processing facilities is minimized, because development and operations are planned and conducted by a single operator. Often powerlines are distributed throughout the unit and diesel engines are converted to electric motors. Unitization may also involve wider spacing than usual, resulting in fewer wells. Access roads are usually shorter and better organized (USDI 1981a).

Enhanced Recovery Projects in the Cody Resource Area

An oil reservoir typically contains oil, gas, and water trapped within fine rock zones under tremendous pressures. Because of the pressure, much or all of the gas is dissolved in the oil. "Primary drive" is by the expansion of pressurized water and gas in solution which forces oil out of the...
pores into the well and up to the surface. Oil flow
out of the rock drains energy from the forma-
tion. In order to maintain pressure and begin to
depressor flow, the reservoir pressure begins to
decrease. At this point, as much as 80% of the
original oil may still remain in the reservoir.

To keep oil flowing, pressure is required. Pumps
can be used to pump the oil, but only pres-
sure within the reservoir can force oil into the
bottom of the well bore. To accomplish this, gas
can be injected, but the most popular "secondary
recovery" technique is waterflooding. Water is
injected into the producing formation to replace
the volume of oil extracted and provides a driving
force as well as maintains reservoir pressure.
In reservoirs that are receptive to it, waterflood-
ing may push out an additional 30% of the original
oil in place. Water, which does not mix with oil,
generally leaves a tail of oil behind in the
form of small droplets trapped by capillary forces
in the rock pores. Releasing oil that water alone
will not move requires either chemicals, solvents,
or heat. But, water flooding is not a litch
remedy applied only to dying reservoirs. Water
injection wells may be drilled in newly discovered
fields, along with development wells to maintain
pressure as early as possible and lengthen the life
of the reservoir.

Carbon dioxide (CO2) is also injected into oil
reservoirs, sometimes after waterflooding, to
recover more oil. Ideally, for most efficient dis-
place ment, CO2 should mix with the oil, but, it
does this only gradually, if at all. Moving through
the reservoir, CO2 is less dense than lighter oil
hydrocarbons from the oil and, as it becomes en-
riched with these, it achieves a composition which
allows it to move from this point on as a "miscible
flood" which is achieved which should dis-
place virtually all of the oil from the rock matrix.

Among thermal processes, steam accounts for
the bulk of recovered oil. Steam recover 77% of
all oil produced by enhanced recovery methods.
Unlike chemicals, which alter the relationship
of oil to the flooding medium and to the reservoir
rock, steam helps heavy oil to flow by reducing
its viscosity and conversion within the
reservoir. Steam distillation also assists in moving
oil, particularly lighter oils.

The fields undergoing waterflooding in the plan-
ing area are North Dancer, Frannie, Oregon
Basin, Byron, and Shoshone. No fields are cur-
rently undergoing CO2 injection. If the proposed
Amoco CO2 flood ever comes on stream, an extension of
the Barroll pipeline from approximately Powder
River, Wyoming in Natrona County to Elk Basin,
then this secondary recovery method will become
more common, especially in Elk Basin. There are
currently two steam injection wells operating in
the field. The polymer flood recovery
method has occurred in the Oregon Basin, Byron,
and Garland fields, but was discontinued because
the polymer was too corrosive on the casing and
tubing in the wells.

As additional oil reserves become more difficult
to locate in the future, the increased use of
enhanced recovery methods is a virtual necessity, but
only minimum requirements can be established,
then modified for the individual well.

The first step in the P&A process is the filing
of the Notice of Intent to Abandon (NIA). This
will be reviewed by both the Surface Management
Agency (SMA) and the BLM District Office. The
NIA must be filed and approved prior to plugging
a past producer. Verbal plugging instructions
can be given to prevent fluid migration between
zones, to protect minerals from damage, and
to restore the surface area. Each well has to be
handled individually due to a combination of fac-
tors, including geology, well design limitations,
and specific regulatory concerns. Therefore,
in operating conditions, approval is required by the
respective state regulatory agency. This approval
is questioned if a proper cement job is
performed. Cement bond can be obtained under
these circumstances. Although, the number of
bore holes must be balanced against the
placement of centralizers (if any), and a myriad
of other factors affect the integrity of the casing
and cement job. One of the most important fac-
tors influencing a "cement job" is the pumping
method. Cement can be pumped and placed in
any of three flow regimes: plug flow, laminar flow,
and turbulent flow. The flow regime is a function
of the velocity at which the slurries flow. Plug flow
has a very slow velocity and takes the most time
to pump. Turbulent flow requires high hydraulic
power, with some service companies unable to
cement plug in turbulent flow under certain con-
ditions.

**Blowout Prevention**

In the early days of drilling, no blowout preven-
tion equipment was used. Today special attention is
given to blowout prevention and much of
the equipment associated with drilling rigs is for
handling excess pressure at the surface. Blowout pre-
vention equipment is tested and inspected regu-
larly by both the rig personnel and the
enforcement branch of the BLM. Reasonable
standards are currently in effect and oper-
ators are willing to follow them due to the
dangerous nature of an uncontrolled flow from the
well. The BLM is currently attempting to upgrade stan-
dards for blowout prevention stack tests to require
full working pressure tests instead of the lower
pressures currently specific in ODM 643 3 GC 8
Well trained rig personnel are a necessity for proper blowout prevention.

Casing setting depth is also important with
regards to blowout prevention. The casing shoe
must be set in rock which is competent to
withstand the maximum anticipated pressure to which
it will be exposed.

There has been never an uncontrolled blowout
in the Cody planning area. Blowouts are often
caused by extremely high pressures usually asso-
ciated with gas. In general, most areas in the Big-
horn Basin are underpressured and there is rela-
tively little gas production in the planning area.
Although the chance exists for a blowout in the
planning area, there is a smaller probability than for
other areas in the state.
GLOSSARY SUPPLEMENT

ADVISORY COUNCIL. An advisory council is a citizens advisory group formed to advise the district manager on public land management issues. Each of the ten appointed members represents a specific area of interest and constituency related to the use and management of the public lands, and each is appointed by the Secretary of the Interior for a three-year term. Advisory councils are formed under several authorities, including the Federal Land Policy and Management Act of 1976.

COMMUNICATION SITE WINDOW. Designated area preferred as the location for future communication facilities. Designation usually follows history of past use.

FORAGE CONDITION. A subjective evaluation of the forage plants in a community based on relative considerations such as palatability, length of palatable periods, accessibility, nutritive value, and productivity of desirable species in relation to potential.

SURFACE DISTURRING ACTIVITY. Any human-caused act that results in the destruction or removal of the existing vegetation or soil. Some surface disturbing activities are road construction, ORV use, fence building, and mineral production.
As the nation's principal conservation agency, the Department of the Interior has basic responsibilities for most of our nationally owned public lands and natural resources. This responsibility includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses the nation's energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.
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ADDITIONAL, CORRECTED, AND RENUMBERED REFERENCES

Note: Most of the literature cited in the proposed RMP final EIS is cited in the References section of the
Draft RMP EIS. This list contains additional literature not cited in the draft document that was used in research for the
document or cited in this document in addition to a few references that have been updated or are repeated because mistakes have
been corrected. An asterisk before a reference indicates that the bibliographic information is unchanged from the draft
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