

APPENDIX D
(APPENDIX II IN 1990 RMP)

COAL

Introduction

This appendix summarizes the final federal coal management decisions for the planning area. The process used to arrive at these decisions is briefly explained. This summary is intended to help the public to understand the federal coal management program as it applies to the planning area and to show the requirements that must be met under 43 CFR 3400. These planning decisions will guide the development of the federal coal resource in this area during the remainder of the 1990s and afterward.

[NOTE: All maps referred to in this appendix can be found on BLM Internet site at: <http://web.ead.anl.gov/rmpweb>]

To implement competitive coal leasing under regulations contained in 43 CFR 3420, on November 9, 1979, the BLM established a number of federal coal production regions, including the Green River-Hams Fork Region. That coal region includes the following counties: in Wyoming, Albany, Carbon, Lincoln, Sublette, Sweetwater, and Uinta; in Colorado, Grand, Jackson, Moffatt, Rio Blanco, and Routt. It was estimated that the coal production region contained sufficient federal coal deposits to justify offering coal leases through the competitive leasing process set out in 43 CFR 3420.3 through 3420.6. Much of the planning area is within this coal region.

During its October 9, 1987, meeting in Denver, the Green River-Hams Fork Regional Coal Team discussed the proposal to operate in a lease-by-application mode. As a result of that meeting, the regional coal team decided to offer an additional opportunity for public comment, with the comments received to be considered and responded to before the director of the BLM makes a final decision on the subject.

A decision document on lease-by-application was published in the Federal Register of December 28, 1987, along with a request for public comments. Two comments were received, both of which supported leasing-by-application in the Green River-Hams Fork Region. Therefore, since there is limited industry interest in additional tracts of federal coal in this region, coal leasing in the counties listed above will be handled on a lease-by-application basis under 43 CFR 3425. (The governors of Colorado and Wyoming concur in the recommendation.) The regional coal team will continue to be involved in the lease-by-application process as described in section 6c of its charter.

It is expected that this action will result in substantial savings in administrative costs to the federal government and the states of Colorado and Wyoming while a responsive leasing process is retained for the coal industry.

Whether coal is leased through leasing-by-application, activity planning, or coal lease exchanges, decisions to lease must be made within the area identified in this document as available for further consideration for coal leasing.

The objectives in managing the federal coal resource in this planning area are (a) to provide for both short- and long-range development of federal coal in an orderly and timely manner, consistent with the federal coal management program, policies, environmental integrity, national energy needs, and related demands; (b) to identify federal coal that is acceptable for further consideration for leasing; and (c) to identify appropriate mitigation for sensitive areas.

Requirements and Mitigation

Introduction

Lessees will be required to develop their federal leases in compliance with applicable federal, state, and local laws and regulations. These would be considered in-place constraints on a lessee's activities.

All areas identified in this document as acceptable for further consideration for coal leasing are subject to the following mitigation requirements:

Cultural Resources

- a. Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall conduct a cultural resource intensive field inventory in a manner specified by the authorized officer of BLM on portions of the mine plan area and adjacent areas, or exploration plan area, that may be adversely affected by lease-related activities and which were not previously inventoried at such a level of intensity. The inventory shall be conducted by a qualified professional cultural resource specialist (i.e., archaeologist, historian, or historical architect, as appropriate) approved by the Authorized Officer of the surface managing agency (BLM if the surface is privately owned), and a report of the inventory and recommendations for protecting any cultural resources identified shall be submitted to the Regional Director of the Office of Surface Mining (OSM) and the Authorized Officer of BLM (or only to the authorized officer of BLM if activities are associated with coal exploration outside an approved mining permit area), to protect cultural resources on the leased land. The lessee shall undertake measures, in accordance with instructions from the Regional Director or Authorized Officer to protect cultural resources on the leased land. The lessee shall not commence the surface-disturbing activities until permission to proceed is given by the Regional Director or Authorized Officer.

- b. The lessee shall protect all known cultural resource properties within the lease area from lease related activities until the cultural resource mitigation measures can be implemented as part of an approved mining and reclamation plan or exploration plan.
- c. The cost of conducting the inventory, preparing reports, and carrying out mitigation measures shall be borne by the lessee.
- d. If cultural resources are discovered during operations under a lease, the lessee shall immediately bring them to the attention of the Regional Director or authorized officer, or the authorized officer of the surface managing agency if the Regional Director is not available. The lessee shall not disturb such resources except as may be subsequently authorized by the Regional Director or authorized officer. Within two (2) working days of notification, the Regional Director or authorized officer will evaluate or have evaluated any cultural resources discovered and will determine if any action may be required to protect or preserve such discoveries. The cost of data recovery for cultural resources discovered during lease operations shall be borne by the surface managing agency unless otherwise specified by the Authorized Officer of BLM or of the surface managing agency (if different).
- e. All cultural resources shall remain under the jurisdiction of the United States until ownership is determined under applicable law.

Paleontological Resources

If paleontological resources, either large and conspicuous and/or of significant value are discovered during construction, the find will be reported to the authorized officer immediately. Construction will be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM-approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological value. Operations within 250 feet of such discoverer will not be resumed until written authorization to proceed is issued by the authorized officer. The lessee will bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operations.

Black-footed Ferret Habitat

The lessee will be required to monitor and inventory the lease area for establishment of potential black-footed ferret habitat (i.e. prairie dog towns) and, if any such habitat is found, to conduct ferret inventories, all in accordance with the guidelines below. In the event that ferret occurrence is identified, the lessee shall notify the BLM and USFWS and

will be required to adhere to any modifications in the mining operation provided by the USFWS and the BLM to protect the endangered species.

The following Black-Footed Ferret Inventory Guidelines will be followed. Proposed developments such as coal lease lands, power plant sites, well fields, dam sites, and facilities relating to these developments should be surveyed for prairie dogs before the project is approved. If prairie dogs are found on the proposed site, colonies should be mapped on topographic maps and each colony surveyed using recommended USFWS Black-Footed Ferret Survey Procedures. Ferret searches should be scheduled as close to actual construction as possible and not more than 1 year prior to disturbance to minimize the possibility of missing ferrets that might move onto the area during the period between completion of surveys and the start of construction. Where project disturbance takes place over a long period of time, such as on a coal site, additional surveys or baseline studies for black-footed ferrets are recommended. Results of these surveys will be submitted to the BLM and USFWS for review and clearance. In addition, any burrowing owl nests will be noted and reported to BLM and USFWS.

The Coal Planning Process

Introduction

The federal coal management program established four major steps to be used in the identification of federal coal areas that are acceptable for coal development: (1) identification of coal development potential, including a call for coal resource information (43 CFR 3420.1-2); (2) application of the coal unsuitability criteria; (3) multiple-use conflict evaluation; and (4) surface owner consultation. Collectively, these steps, which are called the "coal screening process" (43 CFR 3420.1-4), are applied in sequence to the review area.

The four major steps and how they were applied to the review area are described in the following sections.

Step 1: Identification of Development Potential Coal

In step 1, areas of coal with potential for development are identified with the use of government drill hole data, data collected through exploration licenses, geological and economic data submitted by coal companies, and interpretations of available geological data from various other sources. Expressions of interest from the coal industry also are used to guide this identification process. Expressions of interest were received for the Atlantic Rim, Indian Springs, North Indian Springs, Wild Horse Draw, and Red Rim areas.

When this screening step is applied, areas without development potential coal and areas with no known interest in development are excluded from further consideration. The

areas found to have development potential are closer to existing transportation and/or contain better quality coal than the areas excluded from further consideration.

Table COAL-AP-1 (updated July 1998) presents coal quality and quantity data on all areas in the planning area that were determined to have coal with development potential. These areas are shown on map 19.

Table Coal-AP-1
Coal Resources in the Planning Area

Coal Area	Federal Acreage	Federal Tonnage (in place)	Average Proximate Analysis					
			BTU/lb ¹	Moisture	Volatiles	Carbon	Ash	Sulfur
Red Rim	9,720	40.6 x 10 ⁶	8,560	22.21	Not available	Not available	9.30	0.45
Wild Horse Draw	1,280	1.7 x 10 ⁶	10,818	12.07	Not available	Not available	7.57	0.67
China Butte	6,240	73.9 x 10 ⁶	8,800	25.57	Not available	Not available	7.35	0.56
Indian Springs	2,500	25.0 x 10 ⁶	9,626	14.75	34.00	42.52	8.24	0.33
North Indian Springs	3,840	25.0 x 10 ⁶	9,015	17.14	37.42	37.75	7.69	0.46
Atlantic Rim	3,650	79.1 x 10 ⁶	10,277	13.41	34.47	43.32	8.79	1.02
NE Cow Creek	7,325	201.8 x 10 ⁶	10,656	15.07	33.40	46.70	5.00	0.94
Hanna Basin	30,040	191.0 x 10 ⁶	10,140-10,420	12.58-12.76	34.30-36.68	41.82-45.19	7.93-8.75	0.46-1.00

The Atlantic Rim, China Butte, and Red Rim areas have potential for surface mining only (see maps 28, 29, and 30). The Indian Springs and North Indian Springs areas have potential only for in situ development of coal resources (see maps 31 and 32). There is potential for both surface and subsurface mining in the Hanna Basin area. The Hanna Basin area contains coal with development potential for surface mining (86 million tons) and subsurface mining (105 million tons). There is potential for both surface and subsurface mining in the Carbon Basin area (see map 33). The Carbon Basin area contains coal with development potential for surface mining (43 million tons) and subsurface mining (270 million tons). Coal in the Wild horse Draw and Northwest Cow Creek has been determined to have no potential for development.

The remaining three screening steps are applied to the coal areas identified in step 1. They are applied in sequence and only to the lands identified as acceptable for coal development in each preceding step.

Step 2: Application of Coal Unsuitability Criteria

Introduction

As required by 43 CFR 3461, the 20 coal unsuitability criteria were applied to the areas identified in step 1.

These criteria involve consideration of existing resource values such as scenic areas, natural and historic values, wildlife, floodplains, alluvial valley floors, and other important features. The purposes of this step are (a) to identify areas with key features or environmental sensitivity that would make them unsuitable for surface coal mining or for subsurface coal mining where there would be surface operations and impacts associated with subsurface coal mining, and (b) to identify any appropriate mitigative measures resulting from the application of the unsuitability criteria and exceptions. The results of the application of the unsuitability criteria to each coal area are described in the following sections. After an expression of interest is filed and prior to tract delineation, the BLM will reinventory a proposed tract area and adjacent land to refine the unsuitability application. If the inventory reveals the presence of species or habitats covered criteria 9 to 15, the BLM will coordinate with the USFWS and WGFD to determine if any federal coal lands within the proposed tract area should be declared unsuitable.

Red Rim

Introduction

No unsuitable areas were identified for the Red Rim area under coal unsuitability criteria 1, 3 through 8, 10, 12, or 17 through 20.

Criterion 2-Rights-of-Way and Easements

In the Red Rim area, most of the rights-of-way crossing the coal areas can be relocated to accommodate coal mining and related activities. Thus, the BLM made a general determination that right-of-way areas are acceptable for coal development, subject to valid existing rights and negotiations for relocating if necessary. Any unforeseen conflicts in these areas should be identified and resolved during the coal activity planning process or during development of mining and reclamation plans.

Criterion 9-Federally Listed Threatened or Endangered Species Habitat

No areas in the Red Rim area were determined to be unsuitable under criterion 9; however, some potential habitat areas for black-footed ferrets have not yet been searched to determine whether or not ferrets are present. The necessary searches and consultation with USFWS will be conducted during coal activity planning.

Criteria 11 and 13-Bald and Golden Eagle Nests and Falcon Cliff Nesting Sites

No areas were determined to be unsuitable under criterion 11 or 13. The area is acceptable for further consideration for leasing subject to the following conditions:

For the protection of nesting eagles and prairie falcons and their associated buffer zones, no surface operations will be allowed in such areas as long as the USFWS determines that the nest is viable (see map 30). If any exceptions are granted for support facilities such as telephone lines, power lines, pipelines, or surface facilities, no surface-disturbing activities will be permitted in such areas during breeding and nesting seasons (prairie falcons, March 15 through July 15; golden eagles, February 15 through July 15). In addition, such exceptions will be subject to restrictive placement and type or design of facilities and to seasonal occupancy restrictions, and they may be allowed only with prior written permission of the authorized officer of the BLM after concurrence of USFWS and consultation with WGFD.

Larger disturbances such as upgrading of existing roads or construction of new roads, buildings, or railroad facilities within the buffer zone will not be permitted. Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new nests should become established on or within 1 mile of the lease area during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting birds.

Criterion 14-Migratory Bird Habitat

No areas in the Red Rim area were determined to be unsuitable under criterion 14. The area is acceptable for further consideration for leasing subject to the following conditions:

Surface disturbance and occupancy restrictions may be required to protect ferruginous hawk nesting areas within raptor nest concentration areas. Therefore, the lessee shall submit to the BLM, the USFWS, the Office of Surface Mining Reclamation and Enforcement (OSMRE), and the WGFD a habitat recovery and replacement plan for protection or enhancement of ferruginous hawk populations affected by habitat loss or displacement of present or historical habitat. The habitat recovery and replacement plan shall be developed in consultation with the BLM, OSMRE, WGFD, and USFWS and may be submitted before or concurrently with the filing of the mine permit application package. The BLM, OSMRE, WGFD, and USFWS will be allowed a minimum of 120 days to review the habitat recovery and replacement plan and to resolve any conflicts or problems in the plan.

The final habitat recovery and replacement plan must provide the locations, current status and reproductive history (two years minimum) of each nest on or within 2 miles of the lease area and shall indicate the methods to be employed by the lessee to ensure that ferruginous hawk productivity and habitat diversity will not decline in the area.

The plan must include, but not be limited to, consideration of the following points:

Nest site protection during the nesting season.

Enhancement and protection of adjacent nesting habitat that will not be affected by mining disturbance (for example, construction of rock structures or pillars or actions intended to increase habitat diversity).

Relocation of unoccupied nests to enhance other suitable habitat before surface disturbance begins.

Restoration of topographic features and vegetative composition to restore nesting habitat and prey diversity affected by mining.

Facilitation of raptor nest protection with private landowners and other public entities on lands adjacent to the lease area.

The plan must include a timetable for implementation of the habitat recovery or replacement plan in relation to the overall mine plan. Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new ferruginous hawk nests should become established on or within 1 mile of the lease area during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting hawks.

Criterion 15-Habitat for State High-Interest Wildlife and Plants

On September 27, 1982, the National Wildlife Federation and the Wyoming Wildlife Federation filed a petition with the OSMRE to designate approximately 9,000 acres as unsuitable. On May 19, 1986, the OSMRE published its decision in the Federal Register. In part, the notice read as follows:

. . .Exercising this discretion, I decline to designate all or any part of the Red Rim petition area as unsuitable for surface coal mining operations, but hereby require that the approval of any Federal mining plan for the petition area include a condition that restricts from development the pronghorn winter range located within the south portion of the petition area until reclamation of pronghorn winter habitat in the north portion of the petition area has been demonstrated to be successful...

Reclamation in the north portion of the petition area shall be demonstrated to be successful when the Department of the Interior finds in writing that the operator/lessee has (1) demonstrated its capability to restore the carrying capacity of the critical winter range, (2) met the requirements of SMCRA, the applicable regulatory program, and the Bureau of Land Management's (BLM's) land-use planning decisions for the petition area, and (3) demonstrated that postmining vegetation would provide for pronghorn forage production equal to or greater than premining conditions. The postmining vegetation (composition and diversity [structural and species-specific]) must approximate premining conditions and be self-renewing when subjected to foraging use. The north portion of the petition area consists of sections 24, 26, and 34, T. 21 N., R. 89 W.; sections 4, 6, 8, and 18, T. 20 N., R. 99 W.; and sections 12, 14, 22, and 24, T. 20 N., R. 90 W. The south portion of the petition area consists of sections 26, 28, 32, and 34, T. 20 N., R. 90 W.; sections 4, 6, 8, 18, and 30, T. 19 N., R. 90 W.; and sections 24 and 26, T. 19 N., R. 91 W.

The decision made by OSMRE is consistent with this approved RMP.

Criterion 16-Floodplains

It was determined that the floodplain area of Separation Creek in the Red Rim area can be mined by all or certain stipulated methods of coal mining without substantial threat of loss to people or property and to the natural and beneficial values of the floodplain, either on a coal lease tract or downstream. Examples of mitigation may include relocation of channels during mining and restoration of channel locations after mining, controlling sediment yields and prohibiting spoil dumping in channels, lining channel bottoms, revegetation, and general mined-land reclamation. Therefore, no areas in the Red Rim area were found unsuitable under criterion 16.

China Butte

Introduction

No unsuitable areas were identified in the China Butte area under coal unsuitability criteria 1 through 8, 10, 12, or 17 through 20.

Criterion 9-Federally Listed Threatened or Endangered Species Habitat

No areas in the China Butte area were determined to be unsuitable under criterion 9; however, some potential habitat areas for black-footed ferrets have not yet been searched to determine whether or not ferrets are present. The necessary searches and consultation with USFWS will be conducted during coal activity planning.

Criteria 11 and 13-Bald and Golden Eagle Nests and Falcon Cliff Nesting Sites

No areas were determined to be unsuitable under criterion 11 or 13. The area is acceptable for further consideration for leasing subject to the following conditions:

For the protection of nesting eagles and prairie falcons and their associated buffer zones, no surface operations will be allowed in such areas as long as the USFWS determines that the nest is viable (see map 20). If any exceptions are granted for support facilities such as telephone lines, power lines, pipelines, or surface facilities, no surface-disturbing activities will be permitted in such areas during breeding and nesting seasons (prairie falcons, March 15 through July 15; golden eagles, February 15 through July 15). In addition, such exceptions will be subject to restrictive placement and type or design of facilities and to seasonal occupancy restrictions, and they may be allowed only with prior written permission of the authorized officer of the BLM upon concurrence of the USFWS and consultation with the WGFD.

Larger disturbances such as upgrading of existing roads or construction of new roads, buildings, or railroad facilities within the buffer zone will not be permitted. Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new nests should become established on or within 1 mile of the lease area during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting birds.

Criterion 14-Migratory Bird Habitat

No areas in the China Butte area were determined to be unsuitable under Criterion 14. The area is acceptable for further consideration for leasing subject to the following conditions:

Surface disturbance and occupancy restrictions may be required to protect ferruginous hawk nesting areas within raptor nest concentration areas. Therefore, the lessee must submit to the BLM, the USFWS, the OSMRE, and the WGFD a habitat recovery and replacement plan for protection or enhancement of ferruginous hawk populations affected by habitat loss or displacement from present or historical habitat. The habitat recovery and replacement plan shall be developed in consultation with the BLM, the OSMRE, the WGFD, and the USFWS. It may be submitted before or concurrently with the filing of the mine permit application package. The BLM, the OSMRE, the WGFD, and the USFWS will be allowed a minimum of 120 days to review the habitat recovery and replacement plan and to resolve any conflicts or problems in the plan.

The final habitat recovery and replacement plan must provide the locations, current status, and reproductive history (two years minimum) of each nest on or within 2 miles of the lease area and shall indicate the methods to be employed by the lessee to ensure that ferruginous hawk productivity and habitat diversity will not decline in the area.

The plan must include, but not be limited to, consideration of the following points:

Nest site protection during the nesting season.

Enhancement and protection of adjacent nesting habitat that will not be affected by mining disturbance (for example, construction of rock structures or pillars or actions intended to increase habitat diversity).

Relocation of unoccupied nests to enhance other suitable habitat before surface disturbance begins.

Restoration of topographic features and vegetative composition to restore nesting habitat and prey diversity affected by mining.

Facilitation of raptor nest protection with private landowners and other public entities on lands adjacent to the lease area.

The plan must include a timetable for implementation of the habitat recovery or replacement plan in relation to the overall mine plan. Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new ferruginous hawk nests should become established on or within 1 mile of the lease areas during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting hawks.

Criterion 15-Habitat for State High-Interest Wildlife and Plants

No areas in the China Butte area were determined to be unsuitable under criterion 15. The primary habitat considerations in the China Butte coal area are crucial winter range for antelope and deer and sage grouse leks.

If all or a significant portion of the crucial winter range for one or more of the big game species involved were to be mined or made available for mining during one time span, there probably would be significant long-term impacts on the survival of the herds. However, in considering the exceptions to the criterion, the BLM determined that there will not be significant long-term impacts on the species being protected under certain stipulated methods of mining (such as habitat recovery, limited surface occupancy, or other mitigation requirements) or under sequential mining over a long period to maintain a proper mix and balance between areas disturbed by mining and undisturbed areas.

Further, mitigative measures will be combined with appropriate mining methods to temper the impacts of mining in crucial winter range for big game. Sufficient forage will be provided to maintain WGFD target populations for wintering antelope and deer in the area. Therefore, these areas were determined to be acceptable for coal development with certain stipulated methods of mining and mitigation requirements under a concept of long-range leasing and development.

It was determined that grouse habitat areas are acceptable for coal development with stipulations and mitigation requirements for habitat improvement, development, and reclamation.

The China Butte coal area is acceptable for further consideration for leasing subject to the following conditions:

The lessee shall not disturb the area within n mile of the center of sage grouse strutting/nesting complexes except on areas that are to be mined. Any proposals for surface facilities or activities within a 2-mile radius of the center of sage grouse strutting/nesting complexes will be subject to seasonal occupancy restrictions as determined to be feasible by the authorized officer of the BLM. This measure may partially mitigate losses of sage grouse.

The lease holder shall attempt to relocate sage grouse strutting/nesting complexes that would be destroyed by the proposed action. Relocation efforts are to be coordinated with the BLM and the WGFD. This measure may partially mitigate a reduction in the sage grouse population of the area. (See the wildlife habitat portion of the multiple-use conflict evaluation later in this appendix for reclamation requirements.)

Criterion 16-Floodplains

It was determined that the floodplain area of Fillmore Creek can be mined by all or certain stipulated methods of coal mining without substantial threat of loss to people or property and to the natural and beneficial values of the floodplain, either on a coal lease tract or downstream. Examples of mitigation may include relocation of channels during mining and restoration of channel locations after mining, control of sediment yields and prohibition of spoil dumping in channels, lining channel bottoms, revegetation, and general mined-land reclamation. Therefore, no areas in the China Butte area were found unsuitable under criterion 16.

Indian Springs and North Indian Springs

Introduction

No unsuitable areas were identified in the Indian Springs and North Indian Springs areas under coal unsuitability criteria 1, 3 through 8, 10, 12, or 17 through 20.

Criterion 2-Rights-of-Way and Easements

Most of the rights-of-way crossing the coal areas in Indian Springs and North Indian Springs can be relocated to accommodate coal mining and related activities. Thus, the BLM made a general determination that right-of-way areas are acceptable for coal development, subject to valid existing rights and negotiations for relocating if necessary. Any unforeseen conflicts in these areas should be identified and resolved during the coal activity planning process or during development of

mining and reclamation plans.

Criterion 9-Federally Listed Threatened or Endangered Species Habitat

No areas in Indian Springs and North Indian Springs were determined to be unsuitable under criterion 9; however, some potential habitat areas for black-footed ferrets have not yet been searched to determine whether or not ferrets are present. The necessary searches and consultation with USFWS will be conducted during coal activity planning.

Criteria 11 and 13-Bald and Golden Eagle Nests and Falcon Cliff Nesting Sites

No areas were determined to be unsuitable under criterion 11 or 13. The area is acceptable for further consideration for leasing subject to the following conditions:

For the protection of nesting eagles and prairie falcons and their associated buffer zones, no surface operations will be allowed in such areas as long as the USFWS determines that the nest is viable (see maps 31 and 32). If any exceptions are granted for support facilities such as telephone lines, power lines, pipelines, or surface facilities, no surface-disturbing activities will be permitted in such areas during breeding and nesting seasons (prairie falcons, March 15 through July 15; golden eagles, February 15 through July 15). In addition, such exceptions will be subject to restrictions on location, type or design of facilities, and season of occupancy, and they may be allowed only with prior written permission of the authorized officer of the BLM after concurrence of USFWS and consultation with WGFD.

Larger disturbances such as upgrading of existing roads or construction of new roads, buildings, or railroad facilities within the buffer zone will not be permitted. Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new nests should become established on or within 1 mile of the lease area during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting birds.

Criterion 14-Migratory Bird Habitat

No areas in the Indian Springs and North Indian Springs areas were determined to be unsuitable under criterion 14. The area is acceptable for further consideration for leasing subject to the following conditions:

Surface disturbance and occupancy on about 6,000 acres will be limited to very small-scale and seasonal uses because active ferruginous hawk nests are present. This area includes all of the Indian Springs area and all of the North Indian Springs area except T. 22 N., R. 89 W., section 8, W1/2E1/2, W1/2, and section 28, SW1/4. Small surface disturbances such as pipelines, restricted use roads, and raptor-safe power lines may be allowed in the area so long as they are consistent with all current planning and management decisions and mitigation, and provided that no human

activity or surface disturbance occurs during the nesting season (March 15 through July 31) and that the nest substrate (cliff, rimrock, tree, or other substrate) is not modified to disturb nesting ferruginous hawks.

Larger disturbances like upgrading of existing roads or construction of new roads, buildings, or railroad facilities within nest buffer zones would not be permitted.

A lease would be subject to the following mitigation:

- a. Any federal coal recovered from the Indian Springs Tract will be recovered by in situ coal development methods only.
- b. The lessee must submit to the BLM, the USFWS, the OSMRE, and the state of Wyoming (WGFD and DEQ) a habitat recovery and replacement plan for protection or enhancement of ferruginous hawk populations affected by habitat loss or displacement from present or historical habitat. The habitat recovery and replacement plan shall be developed in consultation with the BLM, the OSMRE, the state of Wyoming (WGFD and DEQ), and the USFWS. It may be submitted before or concurrently with the filing of the mine permit application package. However, because serious impacts can result from an inadequate plan, the BLM, the OSMRE, the state of Wyoming (WGFD and DEQ), and the USFWS would be allowed a minimum of 120 days to review the habitat recovery and replacement plan and to resolve any conflicts or problems in the plan. Close coordination among the BLM, the OSMRE, the state of Wyoming (WGFD and DEQ), and the USFWS during development of the plan will minimize the time needed for review and concurrence.
- c. The final habitat recovery and replacement plan must provide the locations, current status, and reproductive history (two years minimum) of each nest on or within 2 miles of the lease area and shall indicate the methods to be employed by the lessee to ensure that ferruginous hawk productivity and habitat diversity will not decline in the area.

Where rock features are disturbed, reclamation shall ensure replacement of the habitat in kind.

- d. For the protection of nesting ferruginous hawks and their associated buffer zones, no surface operations will be allowed in such areas. If any exceptions are granted for support facilities such as telephone lines, power lines, pipelines, or surface facilities, no surface-disturbing activities will be permitted in such areas during breeding and nesting seasons (March 15 through July 31). In addition, such exceptions will be subject to restrictive placement and type or design of facilities and to seasonal occupancy restrictions, and they may be allowed only with prior written permission of the authorized officer of the BLM upon concurrence of the USFWS and the WGFD.

Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new ferruginous hawk nests should become established on or within 1 mile of the lease area during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting hawks.

Criterion 15-Habitat for State High-Interest Wildlife and Plants

No areas in Indian Springs or North Indian Springs have been determined to be unsuitable for in situ coal development methods under criterion 15. However, surface disturbances and occupancy on approximately 3,000 acres of pronghorn crucial winter range will be limited to very small-scale and seasonal uses (see maps 31 and 32 and the wildlife habitat portion of the multiple-use conflict evaluation later in this appendix for reclamation requirements).

Criterion 16-Floodplains

It was determined that in situ coal development of Indian Springs and North Indian Springs could be undertaken without substantial threat of loss of life or property. Therefore, no areas were found unsuitable under Criterion 16 (floodplains).

Atlantic Rim**Introduction**

No unsuitable areas were identified in the Atlantic Rim area under coal unsuitability criteria 1 through 8, 10, 12, 16 through 18, or 20.

Criterion 9-Federally Listed Threatened or Endangered Species Habitat

No areas in the Atlantic Rim area were determined to be unsuitable under criterion 9; however, some potential habitat areas for black-footed ferrets have not yet been searched to determine whether or not ferrets are present. The necessary searches and consultation with USFWS will be conducted during coal activity planning.

Criteria 11, 13, and 14-Bald and Golden Eagle Nests, Falcon Cliff Nesting Sites, and Migratory Bird Habitat

No areas were determined to be unsuitable under criterion 11, 13, or 14. The area is acceptable for further consideration for leasing subject to the following conditions:

For the protection of nesting eagles, prairie falcons, and ferruginous hawks and the buffer zones associated with the nests of these species, no surface coal mining operations will be allowed in such areas (see map 28). If any exceptions are granted for support facilities such as telephone lines, power lines, pipelines, or small scale surface facilities, no surface-disturbing activities will be permitted in nesting areas or buffer zones during breeding and nesting seasons (eagles,

February 15 through July 15; other raptors, March 15 through July 15). Such exceptions maybe allowed only with prior written permission of the authorized officer of the BLM after concurrence of the USFWS and consultation with the WGFD. In addition, such exceptions will be subject to restrictions on locations, type or design of facilities, and season of occupancy.

Since these and other bird species may move onto or off a given area or elsewhere in the project area, their activities must be monitored to determine changing protection requirements. If any new nests should become established on or within 1 mile of the lease area during the course of mining, the lessee will consult with the USFWS to determine mitigative measures that may be needed to protect nesting birds.

Criterion 15-Habitat for State High-Interest Wildlife and Plants

No areas in the Atlantic Rim area were determined to be unsuitable under criterion 15. The primary habitat consideration in the coal area is crucial winter and yearlong range for elk. The elk rely on a total yearlong range of 784,000 acres, of which about 327,000 acres is winter range and about 131,000 acres (17% of the total range) is crucial habitat, as defined under this criterion. Approximately 3,566 federal acres of this crucial habitat lie within this coal area.

The Atlantic Rim area is acceptable for further consideration for leasing subject to the following conditions:

The area will be subject to mitigation and reclamation measures for the protection of wintering and yearlong resident elk. Any proposals of the lessee to conduct mining operations or construct mining-related surface facilities within the Atlantic Rim coal area will be subject to stipulations for specific placement, design, and type of facilities; management of elk forage; and restrictions on the level of mining and human activity. These stipulations and restrictions will be developed in consultation with the WGFD and in conference with the USFWS, the Wyoming Wildlife Federation, and the National Wildlife Federation. The stipulations and restrictions will address the following situations:

- a. Elk need to get to the north end of the Atlantic Rim during severe winters. Mining activity will be confined to west-facing slopes, and no activity will be permitted east of the line indicated on map 28. This will keep in people and mining activity out of sight of elk moving to the north via the east ridge. Impacts on resident elk will be minimized throughout the year.
- b. Aspen patches are the primary thermal and hiding cover for resident elk. These patches are primarily in and along the major drainages of the Atlantic Rim area. So that impacts on the elk herd can be minimized and the hydrologic integrity of the drainages in which aspen patches occur can be maintained, aspen patches in the major drainages will be protected from disturbance by mining or related support facilities (see map 28).
- c. Routes for access to Atlantic Rim and for transportation of coal from the area will be restricted to those found acceptable through consultation with the WGFD and other interested parties. This will minimize effects on wildlife while allowing consideration of the coal market and any foreseeable coal development in the area. Given present

knowledge, the Twenty-Mile Road from Rawlins to the west side of the Atlantic Rim coal area appears to be the least environmentally sensitive route.

- d. Considerable amounts of winter forage would be unavailable to elk because of mine disturbance and activity. Sufficient forage would be provided to maintain WGFD target populations for wintering elk on the Atlantic Rim portion of the Baggs Elk Crucial Winter Range. The degree of overlap of foraging areas, and thus the dietary overlap between elk and cattle, will be determined, and adjustments in livestock management will be made if necessary. Other mechanisms for replacement of forage, such as fertilization or vegetation manipulation, also will be considered. Artificial feeding will not be considered for forage replacement. The best mechanism or combination of mechanisms will be used to reduce impacts to the elk population.
- e. Since the potential pit sites are part of the crucial elk winter range, human activity should be restricted to the mine site as much as possible. A threshold level of mining activity will be identified beyond which the elk population would be displaced from the winter range. Among other items, this threshold level of activity may address the number of separate pits operated simultaneously, the total amount of acreage disturbed at any given time, and the sequence of pit operations.

Application of this unsuitability criterion was done in consultation and coordination with other governmental agencies and public groups, as discussed in chapter 5 of this document.

Criterion 19-Alluvial Valley Floors

When the coal unsuitability review for the project area was conducted, possible alluvial valley floor areas were identified in two drainages that are in or near the project area- Separation Creek (in Jep Canyon) and Muddy Creek.

No areas were determined to be unsuitable under criterion 19. The area is acceptable for further consideration for leasing subject to the following conditions:

In identified possible alluvial valley floor areas or in other areas near them where the proposed coal mining could interrupt or intercept water flow to farming areas along the drainages, mining will be permitted only with mitigative measures for alluvial valley floor protection that are made a part of an approved mine plan. The state of Wyoming usually identifies alluvial valley floor areas and mitigative measures (if possible) during the mining plan approval and mine permitting stage.

Hanna Basin

Introduction

Coal unsuitability criteria were applied to the unleased federal coal with development potential in the Hanna Basin. No unsuitable areas were identified under coal unsuitability criteria 1, 4 through 8, 10, 12, or 17 through 20.

Criterion 2-Rights-of-Way and Easements

Most of the rights-of-way crossing the coal areas in Hanna Basin can be relocated to accommodate coal mining and related activities. Thus, the BLM made a general determination that right-of-way areas are acceptable for coal development, subject to valid existing rights and negotiations for relocating if necessary, along with appropriate stipulations and consistency with current planning and management decisions. Any unforeseen conflicts in these areas should be identified and resolved during the coal activity planning process or during development of mining and reclamation plans.

Criterion 3-Public Roads, Cemeteries, Buildings, and Occupied Dwellings

Split estate coal lands in T. 22 N., R. 81 W., section 18, W1/2NE1/4NW1/4, were determined to be unsuitable under criterion 3 because of an occupied dwelling on the parcel. Approximately 20 acres containing 400,000 tons of coal are unsuitable.

Criterion 9-Federally Listed Threatened or Endangered Species Habitat

No areas in Hanna Basin were determined to be unsuitable under criterion 9. Some potential habitat areas for black-footed ferrets have not yet been searched to determine whether or not ferrets inhabit the areas. The necessary searches and consultation with the USFWS will be conducted during coal activity planning.

Some survey of bald eagle wintering areas and areas used during migration has been conducted. The WGFD has identified a bald eagle wintering area along the Medicine Bow River adjacent to the Hanna Basin area, but additional fieldwork is required to document the size of the area and its importance. Data from BLM surveys during 1978 and 1979 indicate that eagles made little use of this area. A possible additional area has been identified along the North Platte River. No bald eagle nests have been identified.

No recent sightings of peregrine falcons have been documented for this area. Some limited potential for nesting peregrine falcons exists along Seminoe Reservoir, Medicine Bow River, and possibly Hanna Draw because of the presence of perennial streams and associated nesting sites.

Criteria 11, 13, 14-Bald and Golden Eagle Nests, Falcon Cliff Nesting Sites, and Migratory Bird Habitat

After filing of an expression of interest and before tract delineation, the BLM will reinventory any proposed tract and adjacent land to refine the application of criteria 11, 13, and 14. If the inventory should reveal the presence of species or habitats involving these criteria, the BLM would coordinate with the USFWS and the WGFD to determine if any federal coal lands within the proposed tract area should be declared unsuitable.

Criterion 15-Habitat for State High-Interest Wildlife and Plants

No areas in Hanna Basin were determined to be unsuitable under criterion 15. The primary habitat considerations in the Hanna Basin coal area are sage grouse leks and crucial winter range for antelope and deer.

If all or a significant portion of the crucial winter range for one or more big game species were to be mined or made available for mining during one time span, there probably would be significant long-term impacts on the survival of the herds. However, in considering the exceptions to the criterion, the BLM determined that there will not be significant long-term impacts on the species being protected under certain stipulated methods of mining (such as habitat recovery, limited surface occupancy, or other mitigation requirements) or under sequential mining over a long period to maintain a proper mix and balance between areas disturbed by mining and undisturbed areas.

Further, mitigative measures will be combined with appropriate mining methods to temper the impacts of mining in crucial winter range for big game. Therefore, these areas were determined to be acceptable for coal development with certain stipulated methods of mining and mitigation requirements under a concept of long-range leasing and development.

It was determined that grouse habitat areas are acceptable for coal development with stipulations and mitigation requirements for habitat improvement, development, and reclamation.

The Hanna Basin Coal area is acceptable for further consideration for leasing subject to the following conditions:

The lessee shall not disturb the area within n mile of the center of sage grouse strutting/nesting complexes except on areas that are to be mined. Any proposals for surface facilities or activities within a 2-mile radius of the center of sage grouse strutting/nesting complexes will be subject to seasonal occupancy restrictions as determined to be feasible by the authorized officer of the BLM. This measure may partially mitigate losses of sage grouse.

The lease holder shall attempt to relocate sage grouse strutting/nesting complexes that would be destroyed by the proposed action. Relocation efforts are to be coordinated with the BLM and the WGFD. This measure may partially mitigate a reduction in the sage grouse population. (See the wildlife habitat portion of the multiple-use conflict evaluation later in this appendix for reclamation requirements.)

Criterion 16-Floodplains

It was determined that most identified floodplain areas in Hanna Basin can be mined without substantial threat of loss to people or property or to the natural and beneficial values of the floodplain, either on a coal lease tract or downstream. Examples of mitigation may include control of sediment yields and prohibition of spoil dumping in channels, lining channel bottoms, revegetation, and general mined land reclamation.

The floodplain of the Medicine Bow River in T. 23 N., R. 81 W., section 6, was found unsuitable for mining under criterion 16. This involves approximately 10 acres containing 15,000 tons of federal coal. All other floodplain areas in the Hanna Basin were determined to be acceptable with mitigation, as discussed above.

Step 3: Multiple-Use Conflict Evaluation

Introduction

As required by 43 CFR 3420.1-4(e)(3), multiple land-use decisions were made on areas found suitable upon application of the unsuitability criteria. Step 3, evaluation of multiple-use conflicts, provides for the protection of locally, regionally, or nationally important or unique resource values and land uses not included in the unsuitability criteria.

Groundwater and Surface Water Resources

Potential impacts on groundwater and surface water resources are of concern in the Indian Springs, North Indian Springs, and Atlantic Rim areas. Mitigation will be applied in those areas to reduce the effects due to possible aquifer removal, interruption of groundwater flow, change in groundwater flow from replaced overburden, water quality changes from spoil material leaching and mixing between aquifers, and subsidence and/or fracturing of overlying rocks.

No areas are unacceptable; however, the following mitigation requirements will be applied:

The lessee shall prepare and submit to the BLM, concurrently with the filing of a permit application package, a hydrologic mitigation study. The study must include a factual statement of the following:

- a. Identification of all affected surface water, water table (unconfined), and artesian (confined) waters, including the location and direction of movement of all groundwater.
- b. Appropriate characteristics of the waters, which might include yield or flow; conductance; pH; temperature; alkalinity; total dissolved solids; dissolved amounts of such elements as sulfates, chlorides, barium, cadmium, copper, iron, lead, radioactive materials, turbidity; and total dissolved oxygen.

- c. Identification of development activities that would affect the above waters, and the probable impact on such waters from each activity.
- d. A discussion of the interrelationships between surface water and groundwater in the project area and the likely effects on this relationship from development of the Federal coal.
- e. Identification of proposed mitigative measures to reduce the impacts identified in (c) above.
- f. A plan for monitoring surface water and groundwater conditions in the project area and downstream from the project. The water quality standards of the Wyoming Department of Environmental Quality and the U.S. Public Health Service shall be used where applicable.

In addition, the following mitigation requirement will be applied in the Indian Springs and North Indian Springs areas.

In accordance with state law and regulation, the permit application package submittal shall include a detailed description of the effects of possible mined land subsidence and faulting. This must include the proposed measures to be taken to prevent or minimize the effects of subsidence and faulting and procedures that will be taken in terms of backfilling, grading, contouring, etc., in the event that any subsidence or faulting occurs.

Wildlife Habitat

Loss of wildlife habitat for varying lengths of time on surface-mined areas, roads, railroads, and facilities is unavoidable. In addition to the loss of habitat, some areas will become unusable by animals that are intolerant of human activity. No additional areas have been determined to be unacceptable; however, the following mitigation requirements will be applied in the Indian Springs, North Indian Springs, Atlantic Rim, Red Rim, China Butte, and Hanna Basin areas:

- A. Recovery of wildlife habitat on the project area will be required. The lessee will be required to mitigate habitat loss caused by surface coal mining operations in the project area. Where crucial habitat is disturbed, reclamation will ensure replacement of that habitat in kind. Mitigation methods may require the lessee to employ techniques for wildlife forage manipulation or intensive wildlife habitat management.
- B. Habitat recovery may not be completely feasible in the project area; therefore, recovery or replacement may be accomplished on lands outside the project area in combination with recovery and replacement methods on suitable lands within the project area. Such habitat recovery provisions must be acceptable to the BLM, the WGFD, and the USFWS. Lands outside the project area for such habitat recovery may be made available through the surface management agency, the state, or the lessee. In regard to the above the lessee will be required to develop a habitat recovery and replacement plan designed to protect and/or enhance wildlife habitat. This plan shall be prepared before mining plan approval, in consultation with and subject to approval by the BLM, the USFWS, and OSMRE, and

the state of Wyoming. The habitat recovery and replacement plan shall include, but will not be limited to, the following provisions:

1. A detailed description of the methods selected by the lessee to mitigate habitat loss, together with a comparative analysis of alternate methods that were considered and rejected by the lessee, and the rationale for the decision to select the proposed methods. The replacement may include, but is not limited to, the following techniques:
 - a. Increasing the quantity and quality of forage available to wildlife
 - b. The acquisition of wildlife crucial habitats
 - c. Manipulation of wildlife habitat for selected wildlife species
 - d. Recovery, replacement, or protection of important wildlife habitat by selected methods such as modifying or eliminating fencing. Construction of new fences will be kept to a minimum on winter ranges and within migration routes. Fencing will be coordinated with the WGFD to ensure protection of these resources.
 - e. Wildlife watering developments.
2. A timetable giving the periods of time that will be required to accomplish the habitat recovery or replacement plan and showing how this timetable relates to the overall mining plan.
3. An evaluation of the final plan by the state of Wyoming. The state will comment on the methods selected and the techniques to be employed by the lessee and may recommend alternate recovery or replacement methods. If the state has recommended alternate methods, the lessee shall consider the state's recommendations and, if the lessee rejects the state's recommendations, the lessee shall indicate its reasons as required by provision B, above. If no state comment is included in the plan, the lessee shall verify its consultation with the state and the plan may be considered without state comment.
4. A habitat analysis of the lease area (including a 2-mile buffer around the lease area) and those areas considered for off-site mitigation. The analysis shall identify the following features:
 - a. Distribution of important wildlife species (game, nongame sensitive species, species of high federal interest, and threatened or endangered species)
 - b. Distribution of important standard habitat types

Fisheries, Water Quality, and Recreation

Proposed coal development could cause significant adverse impacts at the Seminole Reservoir, which is managed by the Bureau of Reclamation. Adverse impacts that could result from coal development are (a) interruption or interception of groundwater and surface water systems; (b) water transfer between the reservoir and mining pits, which could degrade water quality and impair fisheries habitat, recreational activities, and downstream water uses; and (c) impairment of scenic quality through visual intrusion of

the mining operation and related recreational activities. Further analysis is available in the "Amendment to the Hanna Basin Management Framework Plan and Draft Environmental Assessment" (USDI, BLM and USDI, GS 1984).

For the protection of the water values of Seminole Reservoir, the BLM and the Bureau of Reclamation have jointly determined that no surface occupancy will be allowed within a 200-foot buffer zone between any surface coal mining operation and the high-water design elevation of 6,363.7 feet. Approximately 3,420 acres containing 22.4 million tons of coal are within this buffer zone.

Producing Oil and Gas Areas

As of this date, a draft policy addressing development conflicts between coal/oil and gas is being considered for adoption. The final policy will guide actions involving coal/oil and gas conflicts.

Lands Near Populated Areas

Federal coal lands in T. 22 N., R. 81 W., section 16, NW1/4NW1/4, and section 18, S1/2NW1/4, are near the towns of Hanna and Elmo. The impacts of coal development on the residents of Hanna and Elmo are a concern. In addition, there are structures on federal land in section 18 related to Hanna's water system.

These lands have been determined to be acceptable for further consideration subject to mitigation. Specific mitigative measures to protect the quality of life and provide for improvements on the land would have to be acceptable to the residents of Hanna and Elmo. These measures should be worked out in coordination with local residents as soon as the BLM receives any possible lease proposal.

Step 4: Surface Owner Consultation

Section 714 of the Surface Mining Control and Reclamation Act (SMCRA) requires that the BLM consult with certain "qualified" owners of "split estate" lands (privately owned surface over federally owned coal) when surface mining of the federal coal is being considered.

In step 4 of the goal planning process, surface owners who may be "qualified" under section 714 of SMCRA are asked to state their opinion for or against surface coal mining on their land. Areas where a significant number of qualified owners oppose surface mining of federal coal are eliminated from consideration for this mining method.

This step does not apply to areas where only subsurface mining methods are concerned. It involves only split estate lands within competitive federal coal areas that remain acceptable for development by surface mining methods after the multiple-use conflict evaluation has been conducted.

The Red Rim, Indian Springs, North Indian Springs, and China Butte areas do not contain split estate lands as defined in this section.

Split estate lands in the Atlantic Rim coal area are as follows:

- T. 18 N., R. 90 W., section 28, W1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4
- T. 19 N., R. 89 W., section 31, all.

Split estate lands in the Hanna Basin coal area are as follows:

- T. 21 N., R. 82 W., section 4, lots 1 and 2, S1/2NE1/4
- T. 22 N., R. 81 W., section 18, NE1/4NW1/4
- T. 23 N., R. 80 W., section 4, lots 3 and 4, E1/2S1/2NW1/4, SW1/4, W1/2SE1/4, SE1/4SE1/4
- T. 23 N., R. 84 W., section 23, W1/2SE1/4; section 35, NW1/4NW1/4

These split estate lands are owned by four qualified surface owners, all of whom were contacted by letter. Replies from three of the qualified surface owners indicated that they were not against surface mining. The fourth qualified surface owner did not reply. The letter sent by the BLM stated that if no reply was received, we would assume the surface owner had no preference against surface mining. Therefore, no lands were eliminated from further consideration on the basis of surface owner consultation.