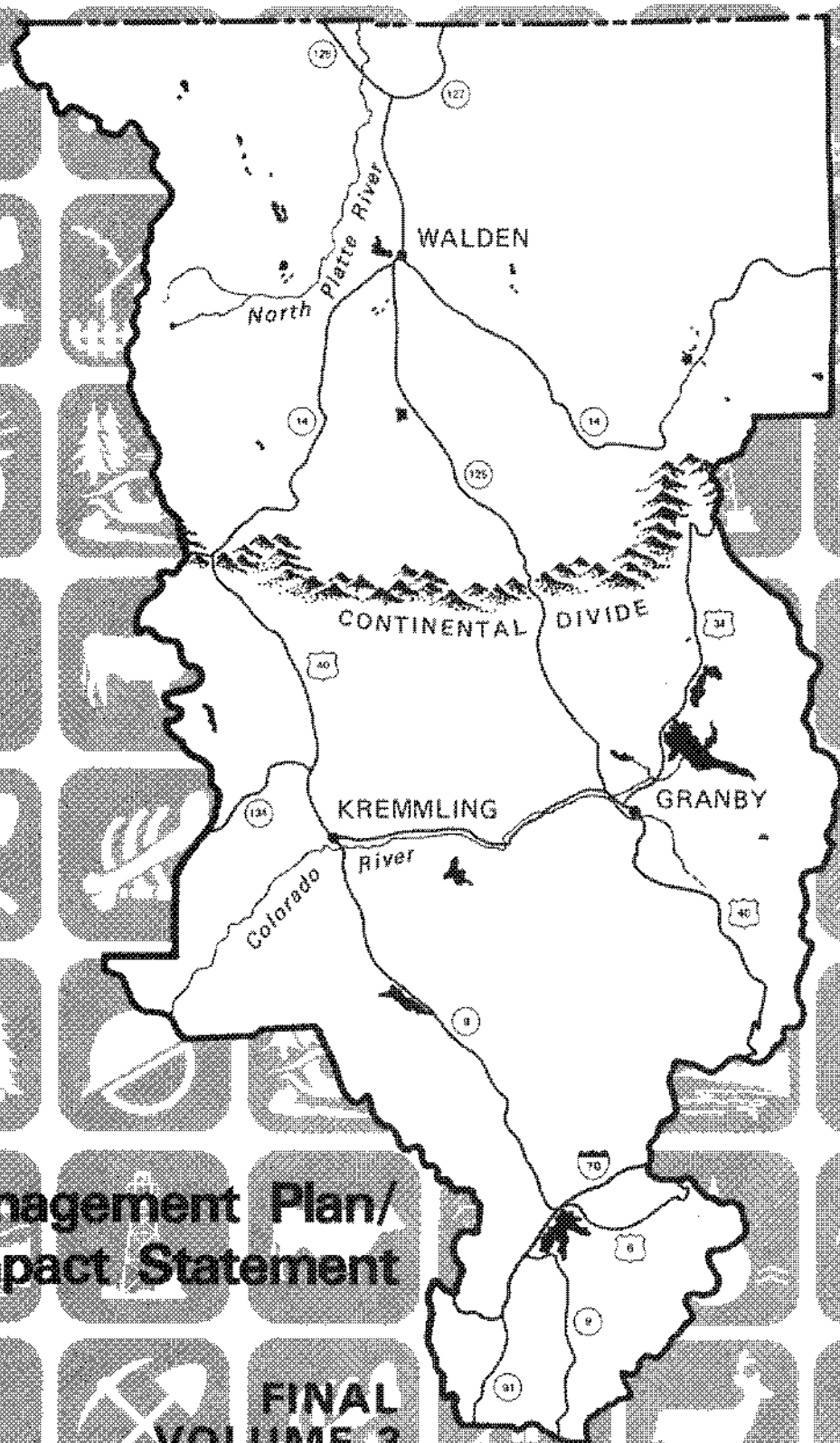
KREMMLING RESOURCE AREA



Resource Management Plan/ Environmental Impact Statement

FINAL VOLUME 3

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management • Colorado

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CRAIG DISTRICT OFFICE
455 Emerson Street
Craig, Colorado 81625

IN REPLY REFER TO
1609
(190)

Enclosed for your review is the final environmental impact statement (FEIS) for the Kremmling Resource Management Plan. This FEIS contains the proposed resource management plan, hereinafter referred to as the Proposed Plan. The Proposed Plan is a refinement of the Preferred Alternative presented in the draft environmental impact statement (DEIS) published in February 1983. The Proposed Plan is the BLM's proposed action.

With the exception of the wilderness recommendation for the Troublesome WSA, all parts of this Proposed Plan may be protested. Protests should be sent to the BLM Director, Bureau of Land Management, 18th and C Streets, NW, Washington, D.C. 20240, prior to date identified on page iii of this document--and should include the following information:

- The name, mailing address, telephone number, and interest of the person filing the protest.
- A statement of the issue or issues being protested.
- A statement of the part or parts being protested.
- 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 issues were discussed for the record.
- A short concise statement explaining why the BLM State Director's decision is wrong.

No sooner than the end of the 30-day protest period and after the Governor's Consistency Review, a record of decision will be issued. Approval shall be withheld on any portion of the plan under protest until final action has been completed on such protest. The record of decision will be issued no later than September 30, 1984.

Sincerely,

Lee Carie

Lee Carie
District Manager

PROPOSED

RESOURCE MANAGEMENT PLAN

and

FINAL

ENVIRONMENTAL IMPACT STATEMENT

for the

KREMMLING RESOURCE AREA

(FES 84-7)

prepared by

Bureau of Land Management

U.S. Department of the Interior

Bob Moore Acting

State Director

COLORADO STATE OFFICE

RESOURCE MANAGEMENT PLAN/

ENVIRONMENTAL IMPACT STATEMENT

for the

KREMMLING RESOURCE AREA, COLORADO

Draft ( ) Final (X)

The United States Department of the Interior, Bureau of Land Management

1. *Type of Action:* Administrative (X) Legislative ( )

2. *Abstract:* This final resource management plan and environmental impact statement describes and analyzes seven alternatives including the Proposed Resource Management Plan for the Kremmling Resource Area. It was developed following a 90 day review of the draft resource management plan/ environmental impact statement. The final resource management plan will be published with the record of decision in September 1984.

3. *For further information, contact:*

Harold Belisle, Area Manager

Bureau of Land Management

Kremmling Resource Area

P.O. Box 68

Kremmling, Colorado 80459

Telephone: (303) 724-3437

4. Date by which protests must be received:

JUNE 4, 1984

DISTRIBUTION LIST

COMMENTS ON THE ENVIRONMENTAL IMPACT STATEMENT ARE REQUESTED FROM THE FOLLOWING AGENCIES AND INTEREST GROUPS:

Federal Agencies

Department of Agriculture
- Forest Service
- Soil Conservation Service

Department of Energy

Environmental Protection Agency

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- National Park Service
- Office of Surface Mining

Colorado State Agencies

Colorado Division of Planning - State Clearing House (Distributes to State Agencies)
Colorado State University Extension Service

Local Government

Northwest Colorado Council of Governments
County Commissioners and Planning Departments of Eagle, Grand, Jackson, Summit and Larimer Counties
Cities and Towns of Granby, Grand Lake, Kremmling, Hot Sulphur Springs and Walden

Other Organizations

Advisory Council on Historic Preservation
American Petroleum Institute
Audubon Society
Club 20
Colorado Association of 4-Wheel Drive Clubs
Colorado Cattlemen's Association
Colorado Farm Bureau
Colorado Mining Association
Colorado Open Space Council
Colorado River Outfitters Association
Colorado River Water Conservation District
Colorado Wilderness Network
Colorado Wool Growers Association
Independent Petroleum Association of Mountain States
League of Women Voters
Mile Hi Jeep Club
National Audobon Society
Natural Resources Defense Council
Nature Conservancy
North Park Stockgrowers Association
Rocky Mountain Oil and Gas Association
Sierra Club
St. Vrain Valley 4-Wheelers
Utah Wilderness Association
Western River Guides Association

Numerous Organizations and individuals expressing interest have been sent copies of this Environmental Impact Statement.

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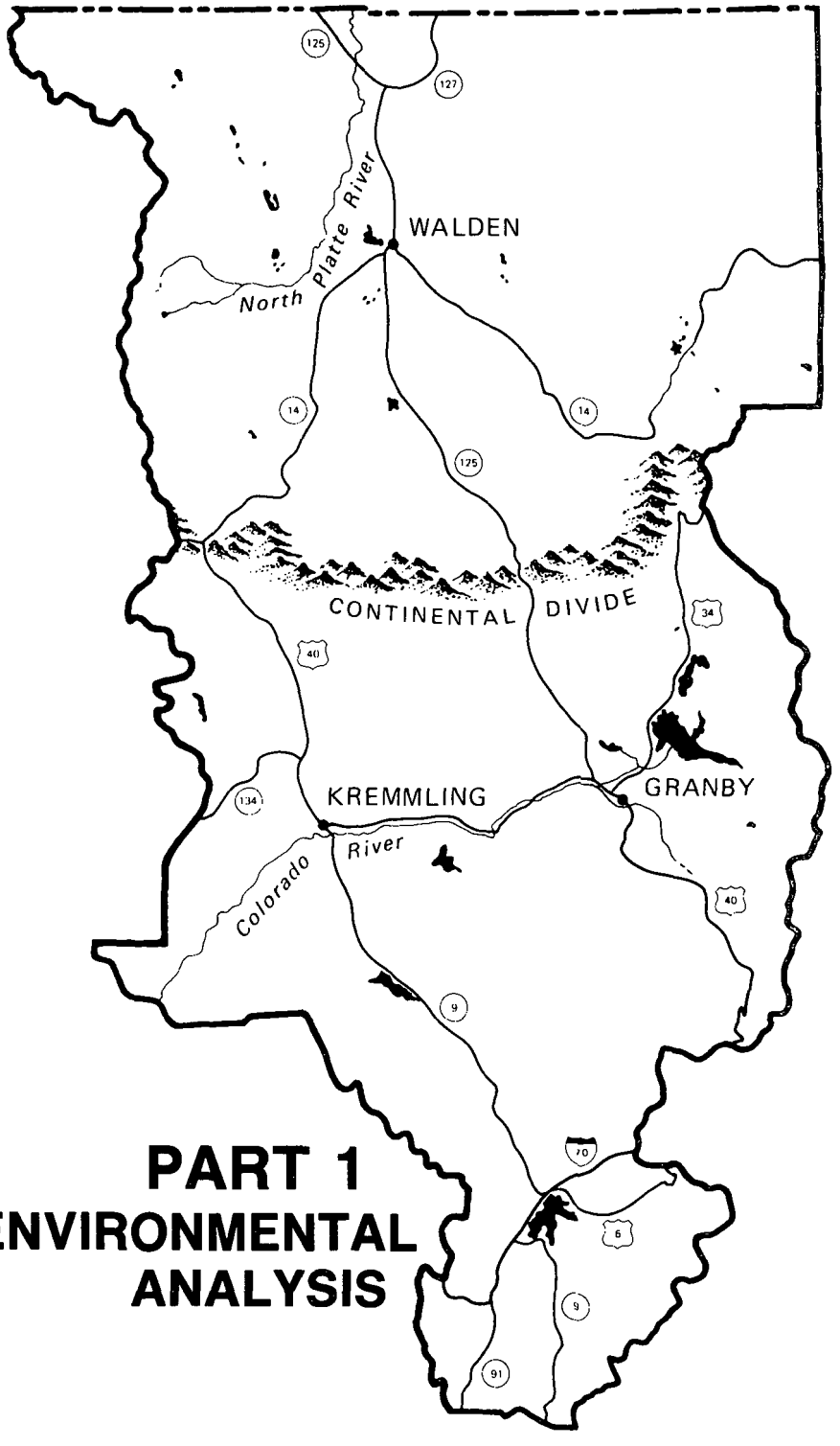


PART 1
ENVIRONMENTAL ANALYSIS

PREFACE

The Final Resource Management Plan and Environmental Impact Statement (RMP/EIS) is a full reprint of the Draft RMP/EIS, incorporating numerous changes and corrections that resulted from comments on the Draft. Part 1 is the Final RMP including the Proposed Plan and the associated environmental analysis. Part 2 includes copies of the letters commenting on the Draft RMP/EIS, the transcripts of the oral testimony given at the public hearings on the Draft RMP/EIS held in April 1983, and responses to those comments.

Significant Differences Between the Draft and Final

In most cases, comments required corrections or clarifications to the text. These changes have been made and generally did not significantly alter the analysis, but simply clarified it for the reader. In other cases, the analysis has been expanded to add new information in response to comments. The following are the major differences between the Draft RMP/EIS and the Final RMP/EIS:

Proposed Plan -- The Proposed Plan was developed from the alternatives identified and evaluated in the Draft RMP/EIS. It closely follows the Preferred alternative of the Draft, with a few exceptions which are discussed below.

Livestock Grazing -- Several changes and additions have been made as a result of comments on the Draft RMP/EIS.

The most significant change is the revisions made to the initial livestock use levels. These revisions have been incorporated in order to expand the range of alternatives under consideration for livestock grazing. The revisions are in response to various comments that "the Draft RMP lacks a full range of reasonable alternatives for livestock grazing". The revisions consider and evaluate a greater spread of initial livestock use than those identified in the Draft. The Continuation of Present Management alternative has been revised to show the existing authorized use as the proposed initial livestock use. The Recreation and Natural Environment alternatives have been revised by showing a significant decrease in the proposed initial livestock use. The Economic and Energy and Minerals alternatives have been revised in order to show a significant increase in the proposed initial livestock use. These revisions are reflected in the Description of Alternatives in Chapter 3 and the Impact Analysis dealing with the changes in initial livestock use levels has been revised in Chapter 4.

In addition to the revisions, a No Livestock Grazing Alternative has been added to the RMP. A detailed analysis has been incorporated into the Appendix (See Appendix 5).

Other major changes and additions concern various comments that the Draft lacked site-specific allotment by allotment information. In response, two new appendices have been added.

Appendix 2 summarizes the Current Ecological Range Conditions and Current Authorized Livestock Use by allotment. Appendix 4 displays Specific Range Improvements proposed by allotment and Alternative for Management Level 1 and 2 allotments. In addition to the changes mentioned above, Appendix 3 (formerly Appendix 2) has been revised in order to expand the amount of allotment information available and to make it easier for the reader to analyze the various proposals by allotment and alternative.

Wildlife -- The Draft RMP expressed forage allocation for big game in mule deer animal unit months (AUMs), Rocky Mountain elk animal unit months, and antelope unit months. In the Final RMP/EIS, the big game forage allocation is expressed in livestock AUM's to simplify the allocation process and alternative comparison. The big game AUMs were converted to livestock AUMs using the following conversion ratios: 5 mule deer = 1 cow, 1.5 Rocky Mountain elk = 1 cow, and 5 antelope = 1 cow. These conversion ratios were taken from the SCS National Range Handbook.

Special Management Areas -- The North Park Phacelia Site, containing habitat for the endangered scorpion plant (*Phacelia formosula*), would be designated as a Research Natural Area (RNA) in the Proposed Plan instead of as an ACEC. The Kremmling Cretaceous Ammonite Site, containing important fossil remains, would also be designated as an RNA in the Proposed Plan.

Lands and Realty -- Changes and additions were made to the Ownership Consolidation portion of the Lands and Realty Sections in response to public comments, policy changes and management goals and include the following:

1. Appendix 9: Ownership Consolidation: Deletions From Draft RMP/EIS Disposal Areas. 2,718 acres were deleted from disposal categorizations due to their location within a Known Recoverable Coal Resource Area (KRCRA), or Public Water Reserve (PWR).

2. Appendix 10: Ownership Consolidation: Additions or Changes From Draft RMP/EIS Disposal Areas. 4582.19 acres not previously identified, meet the disposal criteria and preliminary environmental review. These parcels are identified as additions or changes to the draft, and have been added to the Proposed Plan. Maps depicting these additions to the other alternatives, as appropriate, are available for inspection in the Kremmling Resource Area Office.

3. Appendix 11: Ptarmigan Small Tract Area parcels identified for Category I: Special Exceptions and Category II: Disposal. Area was not depicted on the Ownership Consolidation-Land Tenure Map.

4. Appendix 12: RMP Map-Ownership Consolidation/Land Tenure - Depicts lands that have identified for disposal and specific types of disposal categories been added to the Proposed Plan. Maps depicting disposal parcels for the other alternatives are available for inspection as shelf-documentation in the Kremmling Resource Area Office.

ORV Designations -- The Off-Road Vehicle (ORV) designation for the Dice Hill area has been expanded under all alternatives (including the Proposed Plan) with the exception of the Continuation of Present Management alternative (See Appendix 7).

Changes That Were Not Made To The Final RMP/EIS

Level of Detail -- Several comments requested more quantitative and site-specific information especially as related to the discussion of environmental impacts in Chapter 4. The majority of these comments appear to result from a misunderstanding of the BLM planning system and how it is supposed to work. A mistake often made is to assume that the product should be complete enough to allow immediate design of projects for the field upon completion of the Resource Management Plan (RMP). When one tries to do this level of planning for an entire resource area and give equal treatment to all resources, it becomes an impossible task within any reasonable timeframe and within budget constraints. Looking at this problem, it becomes obvious that more than one level of planning is needed. The levels of planning and detail are discussed in Response Numbers 13 and 19 in Part 2 of this document.

Map Addendum -- The map addendum that accompanied the draft RMP/EIS was not revised and is incorporated in its entirety by reference into the final RMP/EIS.

Those who commented on the Draft RMP/EIS are encouraged to turn to Part 2 of the Final RMP/EIS to determine the disposition of their comments.

SUMMARY

SUMMARY

Seven multiple use alternatives for the management of public lands in the Kremmling Resource Area were developed and analyzed through the Bureau's planning regulations issued under authority of the Federal Land Policy and Management Act of 1976, as outlined in Chapter 1. The alternatives respond to the major issues identified early in the planning process.

Each alternative is a master plan that would provide a framework within which future, more site-specific decisions would be made, such as directing the management intensity of various resources, developing activity plans (e.g., grazing allotment management plans and transportation plans) or issuing rights-of-way, leases or permits.

The seven alternatives considered, in summary, are:

1. CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)

This alternative allows for the management and flow of outputs from the public lands and resources in the Kremmling Resource Area at their present levels. A change, however, would be required in the status of the Troublesome Wilderness Study Area (WSA), in order to comply with provisions of the Federal Land Policy and Management Act requiring that suitable or nonsuitable recommendations be made for all WSAs.

All Federal lands in the resource area would remain open to entry under the provisions of the Mining Laws of 1872, except those lands presently under protective withdrawal. Surface protection would be addressed in accordance with the provisions of the Surface Management Regulations (43 CFR 3809). All Federal lands would remain open to oil and gas leasing and development, except for 640 acres in the North Sand Hills, which would be closed to leasing. Surface use restrictions would be addressed in the existing Umbrella Environmental Analysis for Oil and Gas Leasing.

Coal leasing on Federal lands would be limited to emergency leases necessary to continue existing mining operations. Water resources would be protected through limits placed on surface disturbing activities.

Livestock forage would be licensed at an existing level of 45,648 AUMs in the short term. Current management intensity would also remain the same, with only 4 out of 311 allotments receiving intensive management (representing 4 percent of the public lands in the Resource Area). At the present level of management long term forage production would be expected to decline to 40,817 AUMs or 11 percent below current authorized levels. Approximately 50,000 acres of productive forest lands would be managed for the production of forest products. An annual harvest of approximately 5 million board feet of timber would be allowed. Public lands would be managed to provide sufficient habitat to maintain wildlife populations at their 1980 levels. Approximately 21,950 AUMs would be available for wildlife on 326,800 acres of public land. Threatened and endangered species' habitat would be protected from surface disturbing activities.

Maintenance of visual character in "sensitive" Class II areas would be emphasized. The Upper Colorado River and the North Sand Hills would continue to be managed as special recreation management areas, the Upper Colorado for floatboating and related activities, and the North Sand Hills for ORV use on the open sand dunes, while protecting important cultural resource and the dune environment. The Troublesome Wilderness Study Area would be recommended as nonsuitable for wilderness designation.

Inventoring and protecting cultural resources from surface disturbing activities would continue. Lands and realty actions would be addressed on a case-by-case basis. No specific tracts of public land would be identified for disposal. No further designations restricting off-road vehicle use would be made for the public lands.

2. PROPOSED RESOURCE MANAGEMENT PLAN (Preferred Alternative)

The Proposed Plan would emphasize the management, production, and use of renewable resources on the majority of the public lands in the Kremmling Resource Area. Opportunities to provide sufficient suitable local lands would be emphasized to allow for the continuation and possible expansion of the coal industry in Jackson County. Scattered tracts of public lands would be prioritized for disposal in the Grand Lake and Granby-Fraser areas to support their recreational and tourism-based economies.

Multiple-use management would be directed toward providing a flow of renewable resources from the public lands on a sustained yield basis. In addition, management would be directed to the expansion of local and regional economies in areas

where Bureau actions could influence orderly economic growth.

The goods and resources provided by the public lands would help meet local, regional and national needs, including the national goal of energy self-sufficiency.

This alternative represents the Bureau's proposed management approach. The management of locatable minerals, oil and gas, visual resources, wilderness, and cultural resources would continue as described in the Continuation of Present Management Alternative.

Approximately 45,000 acres of Federal lands would be identified as priority areas for future coal leasing for the continuation and expansion of the coal industry in Jackson County. Water quality would be maintained and protected through restrictions on surface disturbing activities. Sensitive watersheds would be improved through intensive management practices initiated by other resource programs, such as range or forest management.

A reduction of 13 percent (from 45,648 AUMs to 39,726 AUMs) would occur in the short term allocation of livestock forage. Seventy six grazing allotments, or 51 percent of the public grazing lands, are identified for increased management intensity for the purpose of improving overall forage conditions. This increase in management intensity would expect to yield a long term forage production level of 54,296 AUMs or 19 percent above current authorized use.

Approximately 40,000 acres of productive forest lands that are economically accessible would be intensively managed for the production of forest products. An annual harvest of approximately 4.5 million board feet of timber would be allowed. Public lands would be managed to provide sufficient habitat to maintain wildlife populations at levels determined by the Colorado Division of Wildlife's Strategic Plan where conflicts with livestock did not exist. Approximately 26,200 AUMs of forage would be available for wildlife on 326,800 acres of public land.

The North Park site containing habitat for the endangered scorpion plant (*Phacelia formosula*) would be designated as a Research Natural Area (RNA). Remaining threatened and endangered species habitats would be protected from surface disturbing activities through use of stipulations. The Cretaceous Ammonite site north of Kremmling would also be designated as a RNA.

The upper Colorado River and the North Sand Hills would be designated as special recreation management areas, with management continuing as described in the Continuation of Present Management Alternative. The remaining public lands would be managed for dispersed types of recreation.

Criteria would guide the placement of major rights-of-way on public lands and be used to determine which types of public lands would be made available for disposal. Approximately 18,700 acres would be suitable for disposal by various methods.

All public lands would be designated as either open (88 percent) or limited (12 percent) to off-road vehicle use.

3. ENERGY AND MINERALS ALTERNATIVE

This alternative would emphasize the exploration, development, and transportation of energy, energy minerals, and critical mineral resources on Federal lands within the Kremmling Resource Area. Multiple-use management would be directed toward providing timely Bureau actions and support necessary to help meet national needs for energy, critical minerals, and energy self-sufficiency.

The management of forest products, threatened and endangered species, visual resources, wilderness, and cultural resources would continue as described in the Continuation of Present Management Alternative.

Locatable minerals and oil and gas resources would remain available to the degree identified in the Continuation of Present Management Alternative. However, exploration and development of these resources would be favored.

Conflicts with competing uses would be resolved, emphasizing the mineral and oil and gas needs. Surface use restrictions would be limited to the minimum necessary to protect or maintain the affected environment. Approximately 60,000 acres of Federal lands would be identified as priority areas for future coal leasing for the continuation and expansion of the coal industry in Jackson County.

Grazing management would continue at present levels but livestock forage would be targeted for an increase of 15 percent (from 45,648 AUMs to 52,652 AUMs) in the short term. The increase would be realized by allocating approximately 40 percent of the existing big game wildlife forage to livestock. With this shift in forage allocation and no increase in grazing management, a decline in long term forage production is expected to reach a level of 48,754 AUMs. This shift in forage allocation would result in less forage than required to support 1980 big game population levels.

Emphasis would be placed on protecting and maintaining water quality. Intensive watershed management practices would be employed to improve watershed conditions on sensitive watersheds. The Upper Colorado River and the North Sand Hills would be designated as special recreation management areas (SRMA), with management continuing as described in the Continuation of Present Management Alternative. The Troublesome WSA would also be designated as SRMA to be managed for primitive and backcountry recreation opportunities.

Criteria would guide the placement of major rights-of-way on public lands and would be the least restrictive in this alternative. Criteria would also guide the determination of public lands suitable for disposal. Approximately 12,000 acres of public lands would be suitable for disposal by various methods.

All public lands would be designated as either open (93 percent) or limited (7 percent) to off-road vehicle use.

4. ECONOMIC BENEFIT ALTERNATIVE

This alternative would emphasize providing economic benefits to the local and regional economy. Multiple use management would be directed toward the production of goods and services on the public lands within the Kremmling Resource Area to meet expected local and regional demands. Those resources whose use and development best contributed to the employment and income of local residents and that benefited both local and regional economies would be emphasized. Economic diversification would be encouraged and opportunities for local and regional economic expansion would be provided.

The management of locatable minerals, oil and gas, forest products, threatened and endangered species, visual resources, wilderness, and cultural resources would continue as described in the Continuation of Present Management Alternative. The maximum amount of Federal lands, approximately 107,000 acres, would be identified as priority areas for future coal leasing for the continuation and expansion of the coal industry in Jackson County.

Water quality would be maintained and protected through restrictions in surface disturbing activities. The condition of sensitive watershed would be improved through intensive management practices initiated by other resource programs, such as range or forestry.

As in the Energy and Minerals alternative, livestock forage would be initially targeted for an increase of 15 percent (from 45,648 AUMs to 52,652 AUMs) by shifting 40 percent of the available big game forage to livestock. However, differing from the Energy and Minerals alternative, management would be intensified on 63 grazing allotments or 45 percent of the resource areas grazing lands to improve overall forage conditons. Long term forage production would be expected to increase to 65,531 AUMs or 31 percent above current authorized use. The shift in forage allocation from big game to livestock would result in less forage than required to support 1980 big game population levels.

The Upper Colorado River and North Sand Hills would be designated special recreation management areas, with management continuing as described in the Continuation of Present Management Alternative. Four areas would be designated SRMAs at a later date, when intensive management would be required to maintain, protect, or enhance projected long-term demands for recreational opportunities. Remaining public lands would be managed for dispersed types of recreation.

Criteria would guide the placement of major rights-of-way on public lands and be used to determine which types of publc lands would be made available for disposal. Approximately 16,700 acres would be suitable for disposal by various methods.

All public lands would be designated as either open (89 percent) or limited (11 percent) to off-road vehicle use.

5. RENEWABLE RESOURCE ALTERNATIVE

This alternative would emphasize the multiple use management of renewable resources to meet local, regional, and national needs. The renewable resources which traditionally support the local economy would be favored. Although all renewable resources are favored, nonrenewable resource uses would be continued to sustain existing industry's demands.

The management of locatable minerals, oil and gas, visual resources, wilderness and cultural resources would continue as described in the Continuation of Present Management Alternative. Approximately 13,000 acres of Federal lands would be identified as priority areas for future coal leasing for the continuation of the coal industry in Jackson County.

Water quality would be maintained and protected through restrictions on surface disturbing activities. The conditions of sensitive watersheds would be improved through intensive management practices

initiated by other resource programs, such as range or forest management.

Livestock forage would be reduced an average of 13 percent (from 45,648 AUMs to 39,726 AUMs) in the short term. Eighty one grazing allotments, or 55 percent of the grazing lands in the resource area are identified for priority management to improve overall forage conditions. Long term forage production would be expected to reach a level of 56,050 AUMs or 19 percent above current authorized use.

Approximately 40,000 acres of productive forest land that is economically accessible would be intensively managed for the production of forest products. An annual harvest of approximately 4.5 million board feet of timber would be allowed.

Public lands would be managed to provide sufficient habitat to maintain wildlife populations at levels determined by the Colorado Division of Wildlife's Strategic Plan when conflicts with livestock did not exist. Approximately 26,200 AUMs of forage would be available for wildlife on 326,800 acres of public lands.

Three sites would be designated as Areas of Critical Environmental Concern. These sites are: the habitat for the endangered scorpion plant (*Phacelia formosula*); the Kremmling Cretaceous Ammonite Site; and the North Sand Hills. Remaining threatened and endangered species' habitats would be protected from surface disturbing activities through use of stipulations.

The Upper Colorado River would be designated as a special recreation management area, with management continuing as described in the Continuation of Present Management Alternative. The remaining public lands would be managed for dispersed types of recreation.

Criteria would guide the placement of major rights-of-way on public lands and be used to determine which types of public lands would be made available for disposal. Approximately 9,100 acres would be suitable for disposal by various methods.

All public lands would be designated as either open (88 percent) or limited (12 percent) to off-road vehicle use.

6. RECREATION ALTERNATIVE

The Recreation Alternative would emphasize providing for and managing recreation opportunities on public lands to meet both existing levels of use and projected long-term demand. Areas with opportunities that are presently highly sought after, or with that potential, would be intensively managed or protected to maintain present recreation opportunities. The remainder of public lands would be managed to ensure their continuing availability for a variety of dispersed recreation activities in relatively unregulated settings.

A growing regional population having more free time and seeking recreation opportunities closer to home will increase the use pressure on the region's public land recreation base. The BLM administered public lands in the Kremmling Resource Area are the object of growing interest and demand as other public lands in the region become overcrowded. Although provisions for recreation opportunities would be emphasized in certain areas, multiple use goals, sustained yield objectives, and all mandatory environmental protection requirements would be met.

The management of locatable minerals, threatened and endangered species, visual resources, and wilderness would continue as described in the Continuation of Present Management Alternative.

Approximately 13,000 acres of Federal lands would be identified as priority areas for future coal leasing for the continuation of the coal industry in Jackson County. Oil and gas leasing would continue as described in the Continuation of Present Management Alternative, except that temporary surface use restrictions would be developed to protect the visual, wildlife, and recreation resources that are emphasized in this alternative.

Water quality would be maintained and protected through restrictions on surface disturbing activities. The conditions of sensitive watersheds would be improved through intensive management practices initiated by other resource programs, such as range or forest management.

Livestock forage would be initially targeted for an average 31 percent reduction (from 45,648 AUMs to 31,305 AUMs). All additional livestock forage would be allocated to wildlife for the maintenance and expansion of big game populations. Grazing management would be intensified on 81 grazing allotments, or 55 percent of the resource area grazing lands to improve overall forage conditions. Consequently, long term forage production should increase to a level of 47,404 AUMs or 4 percent above current authorized use.

Approximately 40,000 acres of productive forest lands that are economically accessible would be intensively managed for the production of forest products. An annual harvest of approximately 4.3 million board feet of timber would be allowed.

Public lands would be managed to provide sufficient habitat to increase wildlife populations above the optimum levels determined by the Colorado Division of Wildlife's Strategic Plan. Approximately

34,370 AUMs of forage would be available for wildlife on 326,800 acres of public lands.

The Upper Colorado River and the North Sand Hills would be designated as special recreation management areas (SRMAs) with management continuing as described in the Continuation of Present Management Alternative. In addition, Independence Mountain, Dice Hill, the Strawberry area, the Troublesome WSA, and the Black Mountain-Drowsy Water Complex would be designated SRMAs to protect and maintain present recreation opportunities in these areas.

In addition to inventorying and protecting cultural resources, emphasis would be placed on managing suitable sites for educational and public information purposes.

Criteria would guide the placement of major rights-of-way on public lands and be used to determine which types of public lands would be made available for disposal. Approximately 13,800 acres would be suitable for disposal by various methods.

All public lands would be designated as either open (88 percent) or limited (12 percent) to off-road vehicles use.

7. NATURAL ENVIRONMENT ALTERNATIVE

The Natural Environment Alternative emphasizes the protection, maintenance and enhancement of the current natural environment within the Kremmling Resource Area. This management alternative would maintain and reinforce the natural environment. The enjoyment and use of the natural environment for present and future generations, both locally and nationally, would be emphasized. Existing multiple use/sustained yield activities, as well as nonrenewable resource uses, would maintain existing industries.

The management of locatable minerals would continue as described in the Continuation of Present Management Alternative. Approximately 13,000 acres of Federal lands would be identified as priority areas for future coal leasing for the continuation of the coal industry in Jackson County. Oil and gas leasing would continue as described in the Continuation of Present Management Alternative, except that temporary surface use restrictions would be developed to protect the visual, wildlife, and wilderness values that are emphasized in this alternative.

Water quality would be maintained and protected through restrictions on surface disturbing activities. The condition of sensitive watersheds would be improved through intensive watershed management practices.

Livestock forage allocation and grazing management would be identical to the Recreation alternative. A net forage reduction of 31 percent (from 45,648 AUMs to 31,305 AUMs) would be allocated to livestock with 81 grazing allotments to receive priority for intensive management. However, any intensive land treatments, such as brush manipulation, would be restricted so as to not substantially alter the natural environment. Prescribed burning would be permitted when a combination of resource values would benefit.

Approximately 40,000 acres of productive forest land that is economically accessible would be intensively managed for the production of forest products. An annual harvest of approximately 4.0 million board feet of timber would be allowed.

Public lands would be managed to provide sufficient habitat to increase wildlife populations above the optimum levels determined by the Colorado Division of Wildlife's Strategic Plan. Approximately 34,370 AUMs of forage would be available for wildlife on 326,800 acres of public lands. A site along the North Platte River containing habitat for the endangered scorpion plant (*Phacelia formosula*) would be designated as a Research Natural Area (RNA). Remaining threatened and endangered species habitats would be protected from surface disturbing activities. The Cretaceous Ammonite site north of Kremmling would also be designated as a RNA.

Maintenance and protection of the visual quality of *all* class II visual areas would be emphasized. The upper Colorado River would be designated as a special recreation management area, as described in Continuation of Present Management Alternative. The North Sand Hills would be managed as an Outstanding Natural Area, with ORV use being prohibited. The remaining public lands would be managed for dispersed types of recreation. The Troublesome WSA would be recommended as suitable for wilderness designation.

Cultural resources would be intensively managed, including inventory, maintenance, protection, and enhancement of important sites. Emphasis would also be placed on managing suitable sites for research, education, and public information purposes.

Criteria would guide the placement of major rights-of-way on public lands, as well as which types of public lands would be made available for disposal. Only about 525 acres would be suitable for disposal by various methods.

All public lands would be designated as either open (86 percent), limited (12 percent), or closed (2 percent) to off-road vehicle use.

CHAPTER 1

PURPOSE AND NEED

CHAPTER 1
PURPOSE AND NEED

Introduction

The Kremmling Resource Management Plan (RMP) will provide a framework for future management of the public lands and resources in the Kremmling Resource Area. This framework for future management will be established by determining which resources will be given management emphasis in the various parts, or priority areas, of the resource area. Each priority area would allow for other resources to be developed or protected to the maximum extent consistent with the resource emphasized in that area. Resource development would be managed within the principles of multiple use and sustained yield.

Dividing the resource area into different priority areas makes it possible to know what to expect for any resource in any given area. A developer of oil and gas, for example, will know where oil and gas development will be favored (have the least restrictions) and where more restrictions will be required if that resource is developed. Utility companies can look at the RMP map and determine where a right-of-way will encounter the fewest restrictions. Areas where range or wildlife improvements can occur with the least threat of later conflict with other resource development will be known.

By inviting the general public resource users and local, state, and other Federal agencies to participate in this planning process, BLM has assured that everyone has been provided the opportunity to have a say in how the Kremmling Resource Area should be managed over the next decade.

Without this plan, there would be no current master plan to guide Bureau management or to tell others how this area will be managed. In addition, any proposed development or protection of resources in the resource area would have to be examined on a case-by-case basis, with each action being weighed against all the other possible uses for the area and its effect on all other resources. This piecemeal approach would not provide a comprehensive or cumulative analysis of the effects of taking these various actions.

The Kremmling Resource Management Plan has been prepared in accordance with the Bureau of Land Management's Planning Regulations, Title 43, Code of Federal Regulations, Part 1600, issued under the authority of sections 201 and 202 of the the Federal Land Policy and Management Act of 1976. The environmental impact statement (EIS) has been prepared according to the Council On Environmental Quality's Regulations for implementing the National Environmental Policy Act of 1969, Title 40, Code of Federal Regulations, Part 1500.

In addition to meeting the need for a master plan for the Kremmling Resource Area, this resource management plan also meets several specific objectives. It identifies the areas within North Park which are suitable for further consideration for coal development. Identification of lands suitable for further consideration for coal leasing is determined according to Title 43, Code of Federal Regulations, Part 3400.

A suit was filed in 1973 in Federal Court alleging that the Bureau of Land Management's programmatic grazing EIS did not comply with the National Environmental Policy Act. As a result of the settlement of this suit, BLM agreed to prepare grazing EISs according to an agreed-upon schedule. The RMP meets this objective.

The RMP includes the study of the Troublesome Wilderness Study Area (WSA) as required by the Federal Land Policy and Management Act of 1976. Through evaluations of the alternatives in this RMP, the value of the Troublesome WSA for wilderness use or for other uses was evaluated and the consequences analyzed. The RMP makes the preliminary recommendation that the Troublesome WSA is nonsuitable for designation as wilderness. This recommendation will be reviewed by the BLM Director and Secretary of the Interior prior to submission to the President.

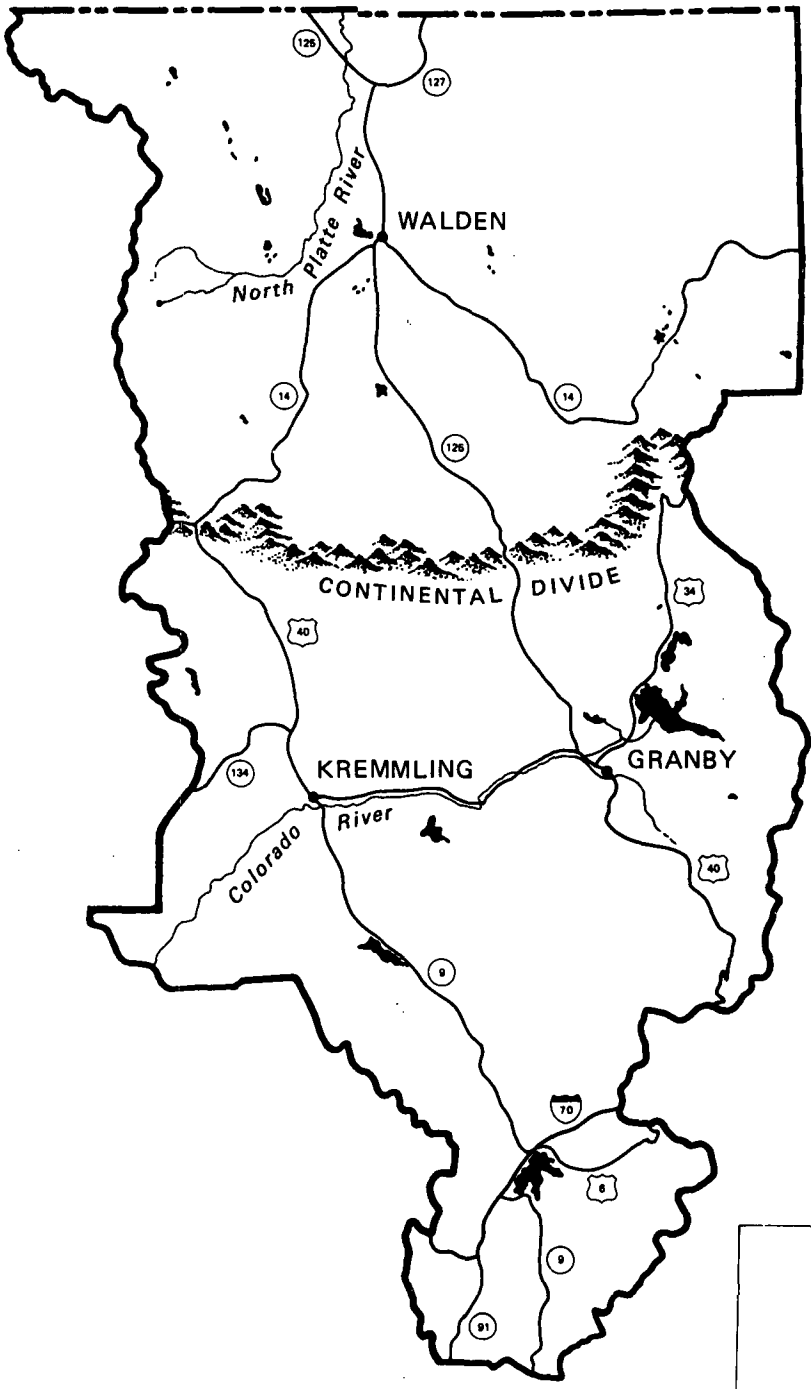
Congress has the sole authority for designating any Federal land as wilderness. Congress takes the recommendations submitted by the President, along with other information it may have obtained through its own sources, and, after debate and counsel, either approves or rejects legislation that formally designates areas as wilderness.

Finally, the RMP identifies lands which will be made available for sale or exchange to consolidate ownership for improved management and to meet other important public objectives.

General Location of the Resource Area

The Kremmling RMP encompasses an area of 1,222,880 acres located in north-central Colorado. Included are Jackson and Grand Counties and por-

KREMMLING RESOURCE AREA



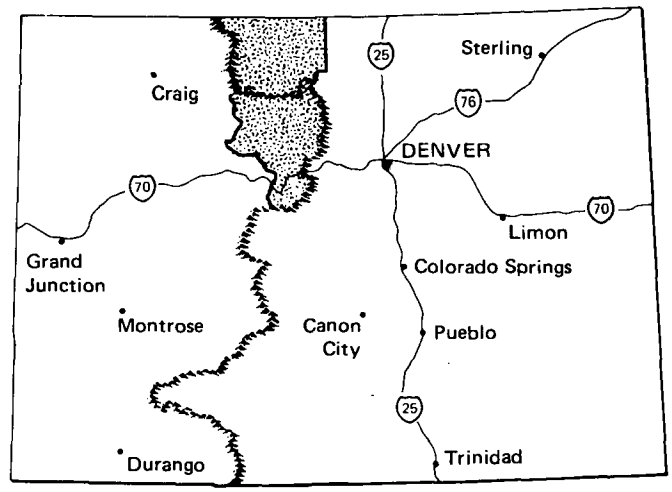


Figure 1 - 1.

COLORADO

tions of Eagle, Larimer, and Summit Counties. The area is bordered on the north by the State of Wyoming; on the west by the Routt National Forest; on the south by the Grand Junction BLM District, White River National Forest, and Arapaho National Forest; and on the east by the Roosevelt and Arapaho National Forests and Rocky Mountain National Park. Of the 1,222,880 acres, 33 percent (398,275 acres) is public land administered by BLM, 57 percent is privately owned, 9 percent is state land, and 1 percent is administered by other Federal agencies.

Figure 1-1 shows the location of the Kremmling Resource Area.

The Planning Process

The planning process is designed to enable BLM to accommodate the uses the public wants to make of public lands while complying with the laws and policies established by the Congress and the executive branch of the Federal government. The RMP process includes nine basic steps and emphasizes the role of public participation at several key stages.

The nine planning steps are as follows:

1. Identification of Issues: In this first step, BLM asks the public, "What's important to you in this planning area?" For the Kremmling RMP, a series of public meetings were held in February and March 1980. In addition, representatives of state and local governments, various user and interest groups, and other Federal agencies, including the U.S. Forest Service, were contacted in March 1980. As a result of these public meetings and contacts and input from BLM staff specialists, planning issues were identified. These were later consolidated into the issues which are presented later in this chapter.

2. Development of Planning Criteria: Criteria are developed to set standards and guidelines for planning and ensure that the RMP is tailored to the previously identified issues. The draft version of the Kremmling RMP planning criteria, along with the planning issues, was distributed to the public in 1980 in the form of a newsletter, *Update*. Approximately 500 copies were distributed or mailed to individuals, elected officials, interest groups, and other agencies.

3. Inventory Data Collection: Based on the issues and planning criteria previously developed, BLM specialists inventory the resources in the planning area, seeing how they are used and what condition they are in. Additional inventory work for the Kremmling RMP was completed in late 1981. Vegetation, wildlife, cultural resources, stream, and recreation inventories were among those conducted. The information thus gathered represents the raw data base used to develop the information and analyses presented in Chapters 2, 3, and 4. The vegetation production data displayed and used in this RMP/EIS was collected during the 1980 field season using the range condition inventory methods prescribed by the Soil Conservation Service. This data was needed to help determine areas suitable for continued rangeland, wildlife, and watershed management and to provide the basis for developing multiple-use management programs and management alternatives. The vegetation production data has also been used to identify and analyze impacts and mitigation of the proposed action and alternatives. Reviewers of this EIS, however, should recognize the limitations of vegetation inventory data. While this data is adequate for purposes of planning and analysis, it must be supported by the results of monitoring studies before making forage allocation decisions.

4. Analysis of the Management Situation: In this step, BLM sifts through the inventory data to define the existing situation, assess public demand for the various resources, and predict the ability of these resources to meet future demands on a sustained yield basis. Upon completing these steps, various opportunities are set forth to meet anticipated public demands and resolve potential resource conflicts (for example, identification of lands suitable for coal leasing or grazing lands in need of management to improve their productivity).

5. Formulation of Alternatives: At this point, BLM formulates a range of options for managing resources. These options range from economic production to environmental protection, thus giving the public lands manager the widest possible range of realistic alternatives to choose from. Alternatives are described in Chapter 3.

6. Estimation of Effects of Alternatives: BLM estimates and describes the physical, biological, economic, and social impacts of each alternative. This environmental analysis is found in Chapter 4.

7. Selection of Preferred Alternative(s): Here the public lands manager reviews the alternatives and their predicted effects and then chooses or develops a preferred alternative. This alternative is then analyzed in turn. The preferred alternative is described in Chapter 3, while its effects are delineated in Chapter 4.

At this point, the draft plan and draft environmental impact statement (EIS) are completed and released for public review and comment. This may result in new information being presented, problems

being pointed out in the BLM preferred alternative, or other alternatives being suggested.

8. Selection of Resource Management Plan: The public lands manager evaluates comments received and selects and recommends a proposed resource management plan to the BLM State Director. After review and approval, the State Director publishes and files the Final RMP and EIS.

9. Monitoring and Evaluation: Once the plan is approved by the State Director, it is implemented. BLM requests funding to carry it out and lists specific jobs needed for implementation. BLM also schedules reviews of the RMP at least every five years to see if it is still workable as time goes on. If change is required, the RMP may be amended or revised.

Issues

The issues which were identified as described in the above section on the planning process are listed here by category.

Locatable Minerals

Withdrawal of public lands to restrict mineral exploration and development

Coal

Availability of Federal coal for lease in the Kremmling Resource Area. Specific areas of interest are the McCallum, Coalmont, and Sheep Mountain areas, all of which are in Jackson County

Oil and Gas

Oil and gas exploration and development

Mineral Materials

Availability of mineral materials such as sand and gravel

Presence of split ownership such as Federal minerals/private surface or Federal surface/state minerals

Flexibility of postmining reclamation requirements

Paleontological Resources

Identification, protection, and interpretation of the paleontological resources on public lands

Water Resources, Soil, and Air Quality

Soil erosion on disturbed areas, such as roads, off-road vehicle (ORV) areas, clearcuts, and areas of mining activity

Maintenance of the high quality air conditions in the resource area

Quality of both surface and groundwater

Salinity in the Colorado River

Maintenance of minimum streamflows

Management of wetland areas

Livestock Grazing

Availability and condition of range improvements

Competition for, and loss of, livestock forage on public lands

Stability of the livestock industry in the resource area

Potential conflicts involving common-use grazing allotments

Forest Products

Continuation of forest management practices, including harvest, improvement of existing timber stands, and rapid regeneration of logged or burned forested areas

Loss of productive forest lands because of wilderness designation

Maintenance of an even flow of forest products

Availability of firewood cutting and gathering areas

Wildlife

Protection of critical big game winter ranges

Balancing of wildlife numbers, particularly big game numbers, with available forage and habitat

Improvement of big game critical winter ranges

Protection of important fisheries habitats

Availability of access to fishing streams on public lands in the resource area, especially to the Colorado River

Protection of threatened and endangered plants and animals

Visual Resources

Maintenance of landscape character, scenic areas, and views

Recreation

Control of off-road vehicle (ORV) use in environmentally sensitive areas on public lands. Designation of areas as either open, closed, or restricted to ORV use

Management of recreation on the Upper Colorado River

The presence of vandalism, littering, and trespass on the public lands and adjacent private lands by segments of the recreating public

Designation of areas of unique geological, scenic, educational, or natural character as areas of critical environmental concern (ACECs), research natural areas (RNAs), or outstanding natural areas (ONAs)

Wilderness

Suitability of the Upper Troublesome Wilderness Study Area (WSA) for wilderness designation

Cultural Resources

Identification and protection of cultural resource sites

Management of unique sites on public lands

Lands and Realty

Availability of public lands for sale or exchange in order to consolidate ownership for improved management

Availability of public lands for urban use or expansion, public purposes, and rights-of-way

Identification of utility corridors (major linear rights-of-way)

Support Needs (Transportation and Access)

Acquisition of public access to large blocks of public land for multiple resource use and management

Maintenance of BLM roads

General Issues

Application of the principles of multiple use to decisions made in the RMP

Coordination of the RMP with existing plans and planning efforts of local and state governments and other state and Federal agencies

Analysis of social and economic impacts and energy conservation in the RMP

Potential for greater demands and impacts to occur on public lands and resources in the Kremmling Resource Area because of the energy shortage and proximity of the area to eastern slope population centers

Concerns Outside the RMP

Numerous concerns were identified that cannot be appropriately addressed by the RMP. These are, however, valid issues that will be resolved inhouse by BLM management or administrative actions. These concerns are:

1. Keeping the public better informed of Bureau activities

2. Delegating more authority to Bureau field managers to enable them to respond to the public more quickly

3. Ensuring the availability of adequate staffing or funding to respond in a timely manner to public service and demand items, such as rights-of-way, leases, permits, and licenses

4. Addressing the problem of red tape and duplication of requirements within agencies

5. Considering establishment of a part-time Bureau office facility in east Grand County and a full-time office in Walden

6. Minimizing the number of government sponsored public meetings by having agencies hold joint meetings whenever possible

The list of issues presented above is only a summary of the most important issues. A complete listing of issues is available at the Kremmling Resource Area Office.

Planning Criteria

The issues listed above were reworded into questions and the Bureau has established parameters within which it intends to answer these questions through the planning process. These parameters, or planning criteria, are summarized below for each of the planning questions. Planning criteria may be legal, policy, or regulatory constraints that direct or limit the Bureau's ability to resolve the issues, or they may be constraints imposed as a result of public input or coordination with state and local governments.

In any case, the planning criteria listed below by resource activity have been used to guide the inventory and to establish limits for the proposed levels of resource use or production under the various alternatives. They were also used in selecting the Preferred Alternative and will be used in making the resource management decisions that will result in the final resource management plan.

Locatable Minerals, Oil and Gas, and Mineral Materials

1. *What Federal minerals should be developed through leasing, location, sale, and free use?*

a. Identify areas where economically significant deposits of oil, gas, uranium, sand, gravel, and other minerals exist.

b. Identify withdrawn areas no longer being used for the purposes of the withdrawal which could be used for mineral development.

c. Give priority to meeting the material needs of local governments and agencies.

d. Give priority to leasing oil and gas in Known Geologic Structures and prospective valuable areas.

e. Limit the general sale of mineral materials if they are readily available from commercial suppliers.

f. Require reclamation that meets Federal and state requirements.

g. Compare the public value of leasing minerals against the use of lands for other purposes and the value of other resources which might be lost.

2. *What areas should be withdrawn from mineral development or have temporary restrictions placed on development?*

a. Identify areas where valuable resources must be protected from the effects of mineral development.

b. Determine those areas which could be developed or explored with appropriate restrictions.

Coal

1. *What Federal coal lands within the Kremmling Resource Area are suitable for coal development?*

a. Identify areas with high to moderate potential for coal development based on resource and demand information and public and industry interest.

b. Evaluate preference right lease applications (PRLAs) and existing leases for their suitability for surface mining.

c. Compare the public value of leasing lands for coal mining against the use of the lands for other purposes and the value of other resources which might be lost.

d. Apply the 20 unsuitability criteria to insure environmental compatibility as required by the Federal coal management program.

e. Obtain surface owner consultation for surface mining.

f. Provide for enough coal leasing to stabilize existing industry in the area.

Paleontological Resources

1. *What should be done to protect and manage paleontological resources?*

a. Through a literature search, identify geologic formations which have potential for containing significant paleontological resources.

b. Protect significant paleontological resources through site avoidance or salvage.

c. Provide interpretation and enhancement of paleontological sites of significant scientific or educational value through management as an ACEC, RNA, or ONA.

Water Resources, Soil, and Air Quality

1. *Where are the waters that need quality maintenance or improvement and how should BLM manage these waters?*

a. Classify the waters in the resource area according to their quality.

b. Develop management practices which will protect and maintain existing water quality.

c. Identify methods to improve the quality of waters not meeting minimum legal standards.

d. Protect water rights and maintain minimum stream flows.

e. Comply with approved 208 plans and Colorado State Water Quality Standards.

2. *Where are the areas of active and potential soil erosion and what can be done to prevent erosion in these areas?*

a. Determine types, potential productivity, and capability of soils in the Kremmling Resource Area.

b. Meet Federal and state regulations on water and air quality.

c. Apply management techniques to control erosion and improve the land's resistance to erosion, especially in areas of fragile soil, riparian zones, floodplains, municipal watersheds, steep slopes, and threatened and endangered species habitat.

3. *How can air quality in the Kremmling Resource Area be maintained or improved?*

a. Ensure that BLM management practices comply with all state and Federal air quality standards and regulations.

b. Take positive steps to mitigate impacts on air quality and to monitor air quality in areas of intensive use.

Livestock Grazing

1. *How should BLM allocate forage to provide for the needs of the livestock industry?*

a. Inventory, monitor, and classify the rangelands according to their management and forage potential.

b. Allocate forage for livestock, wildlife, watershed protection, and other multiple use considerations.

c. Determine management practices which would provide general grazing management and a range improvement program.

d. Develop a method to gradually reduce grazing on rangelands determined to be overstocked.

2. *What should be done to provide needed range improvement projects for grazing allotments?*

a. Categorize allotments by their needs for range improvements and the potential effectiveness of improvements.

b. Provide maintenance for cost-effective improvements, especially those which would result in immediate benefits to the range.

c. Provide new range improvements that will efficiently increase range productivity, such as water developments, fencing, and vegetation manipulations.

Forest Products

1. *What forest lands should be intensively managed for commercial forest products?*

a. Classify lands according to their timber production potential.

b. Assess the level and kind of forest management practices needed.

c. Weigh the value of forest resources against all other resources, such as mining, wildlife, and scenic quality.

d. Determine market conditions and the degree of local dependence on forest products.

e. Develop efficient plans for the harvest, long-term management, and protection of forest lands.

f. Participate in cooperative planning with other forest owners and managers.

2. *What public forest lands should be considered for restocking with trees?*

a. Classify lands according to their restocking potential and establish priorities based on growth potential.

b. Integrate restocking plans with the larger forest management plans.

3. *Which lands are best suited for improved firewood availability to the general public and commercial cutters?*

a. Limit firewood gathering to specific areas to enhance good management.

b. Select areas with abundant slash and logging debris.

c. Consider the effects of firewood gathering on wildlife and other resources.

Wildlife

1. *How should the public lands be managed to provide for the needs of wildlife?*

a. Classify lands according to their value as threatened and endangered species habitat, critical wildlife habitat, and important seasonal habitat.

b. Determine areas of greatest conflict between wildlife and other land uses.

c. In consultation with the Colorado Division of Wildlife, develop effective management practices, including water development, habitat development, and habitat protection.

d. Allocate forage based on the carrying capacity of the range.

2. *Where are the riparian and floodplain areas and what should be done to manage or protect them?*

a. Identify riparian and floodplain areas in the Kremmling Resource Area.

b. Implement a management system to protect, maintain, and enhance all wetland-riparian-floodplain areas administered by BLM.

c. Protect high value streams, riparian zones, and wetlands habitats when fisheries, wildlife, and water quality can be preserved or restored.

Visual Resources

1. *How can BLM maintain the scenic quality of the Kremmling Resource Area?*

a. Follow visual resource management class guidelines when planning multiple use activity locations for public lands.

b. Reduce visual impacts of activities by evaluating landscape character and repeating landscape elements to fit projects into the landscape or to relocate projects to a different landscape type or position to reduce the contrast and disturbance that will be created.

Recreation and Wilderness

1. *What areas should be recommended for designation as wilderness or designated as areas of critical environmental concern (ACECs)?*

a. Inventory the public lands for areas which might be designated as ACECs.

b. Preserve relatively undisturbed examples of native plants, species of special concern, special habitats, aquatic systems, and geologic features.

c. Integrate appropriate ACECs into the Colorado Natural Areas program.

d. Determine suitability of wilderness study areas (WSAs) for wilderness designation and recommend those of appropriate quality to Congress for such designation.

e. Manage the Troublesome WSA under interim management guidelines.

2. *What should BLM do to provide better management on the upper Colorado River?*

a. Consider intensive management of recreation on the upper Colorado River by developing sites and access, regulating use, and providing information and assistance.

b. Consider the collection of a graduated commercial fee to recover some of the expense of intensive management.

c. Protect outstanding environmental areas, including critical floodplains and free-flowing river segments.

d. Ensure management is consistent with Colorado boating regulations and other use authorization procedures.

3. *What should be done to provide more recreational opportunities on the public lands?*

a. Identify dispersed recreational opportunities in the Kremmling Resource Area.

b. Identify areas suitable for recreation development, especially undeveloped areas already being heavily used, areas adjacent to existing travel corridors, and areas that will serve the needs of visitors from throughout the state and nation.

c. Limit development actions to areas which can sustain recreational use without environmental damage and which can realistically be efficiently developed and managed. Ensure these areas are necessary to providing recreation sought by the public and that this recreation is not readily available elsewhere.

d. Limit development to activities which do not duplicate existing services or opportunities and which do not generally have a profit potential for the private sector.

e. Emphasize interpretive programs and resource use programs other than facility use programs.

f. Encourage state, local, private, and other Federal agencies to provide recreational developments through easements or outright land acquisition.

g. Make some access to natural and recreational areas available for all citizens, regardless of age, health, or financial status, when such access is sought by the public.

4. *How should BLM reduce the impacts caused by recreation?*

a. Identify areas being impacted.

b. Protect areas by providing intensive site management where necessary and regulating use if nonregulatory measures fail.

c. Favor management, design, and cooperation over direct regulatory measures to protect resources.

5. *How should BLM provide proper management for off-road vehicle (ORV) use?*

a. Identify areas that are suitable for open, closed, or restricted ORV use.

b. Limit or restrict ORV use in environmentally sensitive areas where it is a management concern.

c. Ensure ORV designation and management are consistent with U.S. Forest Service designations and Colorado off-road recreational vehicle statutes.

Cultural Resources

1. *What should BLM do to provide proper protection and management of cultural resources?*

a. Locate cultural resources by conducting appropriate literature searches and inventories.

b. Protect or avoid sites of importance.

c. Enhance and interpret sites of important scientific or educational value for the public.

Lands and Realty

1. *Which lands should be disposed of or acquired to improve management of the public lands?*

a. Identify lands which are difficult or uneconomic to manage or which will most prudently serve important public objectives by their disposal or sale.

b. Identify lands which could be exchanged to best serve the public interest.

c. Identify lands which could be transferred to other agencies for more efficient or appropriate management.

d. Identify private lands which, if acquired, would consolidate the public lands and thereby improve their management.

2. *Which public lands are suitable for leasing?*

a. Identify lands suitable for leasing for recreation or other public purposes.

b. Identify lands appropriate for leasing to serve the needs of the economy, community expansion, or the production of food, fiber, and minerals.

3. *What public lands would be suitable for the siting of rights-of-way?*

a. Identify tracts or corridors of public lands which, if used as a right-of-way, would have greater public value than if used for other purposes.

b. Limit the granting of rights-of-way in unsuitable areas, such as floodplains, geologic hazard areas, wilderness study areas, etc.

4. *What lands need to have surface and mineral ownership consolidated?*

a. Determine areas of split mineral ownerships where management conflicts exist.

b. Identify areas with significant coal resources which can be consolidated by exchange of Federal and state mineral rights.

c. Identify lands with no mineral potential where mineral rights could be sold to a private surface owner, especially where industrial, residential, commercial, or recreational developments exist or are proposed.

d. Identify mineral estates which cannot be sold because they contain valuable mineral deposits.

Support Needs (Transportation and Access)

1. *What areas of public land need administrative or public access within the Kremmling Resource Area?*

a. Identify large blocks of public land having intensive use

b. Determine timber sale areas

c. Identify areas of high BLM investment or management

d. Locate areas with high outdoor recreation potential

e. Determine other areas needing only restrictive or administrative access

2. *What is needed to develop a sound transportation system for the Kremmling Resource Area?*

a. Classify the value of roads according to type and level of use.

b. Identify road and trail maintenance responsibilities.

c. Close and rehabilitate unneeded roads for resource protection and public safety.

d. Assure the maintenance and improvement of roads to meet their use classification.

e. Identify proposed roads needed for management of lands.

CHAPTER 2

AFFECTED ENVIRONMENT

CHAPTER 2
AFFECTED ENVIRONMENT

This chapter describes the physical, biological, and human components of the Kremmling Resource Area. Emphasis is given to critical or limiting factors that would be affected by BLM management actions. BLM's current management of these components is described in the Continuation of Present Management Alternative in Chapter 3.

The information presented in this chapter is summarized from more detailed information available in the Kremmling Resource Area Office and elsewhere.

TOPOGRAPHY

The Kremmling Resource Area comprises three distinct topographic regions situated in the northern reaches of the Rocky Mountains of Colorado. These regions are called North Park, Middle Park, and the Laramie River Valley.

North Park is a topographic depression called an intermountain basin or park. North Park is typical of intermountain basins, having a relatively flat interior surrounded by mountains (see Figures 2-1 and 2-2). North Park is situated on the east side of the Continental Divide and is the headwater for the North Platte River.

The lowest point in the park is 7,770 feet above sea level on the North Platte River as it enters Wyoming. The average elevation for the basin floor ranges between 8,000 to 8,500 feet. Most of the public lands in North Park are at elevations below 9,500 feet and are located primarily in the central portion of the basin.

Middle Park differs from North Park and traditional basins in that its interior is mountainous (see Figure 2-3). Middle Park is situated on the west side of the Continental Divide and forms the headwaters for the Colorado River. The lowest point on the Colorado River in the resource area is 6,650 feet near McCoy, Colorado. Most of the public lands in Middle Park are also located in the central portions of the park at elevations between 7,000 and 9,500 feet.

The Laramie River region is located east of North Park on the other side of the Medicine Bow Range. This region is a high mountain valley characterized by rolling foothills. The elevation in this part of the resource area varies from 7,700 on the Laramie River at the Wyoming/Colorado border to 9,500 feet on Bull Mountain.

Some topographic features of interest or prominence occurring within the Kremmling Resource Area are:

1. Gore Canyon - deep canyon cut by the Colorado River, located southwest of Kremmling, Colorado.
2. Little Gore Canyon - deep canyon cut by the Colorado River located near Radium, Colorado.
3. Red Gorge - deep canyon cut by the Colorado River, located near State Bridge, Colorado.
4. Byers Canyon - deep canyon cut by the Colorado River, located west of Hot Sulphur Springs, Colorado.
5. Fraser Canyon - deep canyon cut by the Fraser River, located near Tabernash, Colorado.
6. Kremmling Cliffs - shale bluffs overlooking the town of Kremmling.
7. Wolford and Little Wolford Mountain - prominent land feature overlooking Kremmling, Colorado River, and eastern Middle Park. Wolford Mountain has been considered for designation as a National Natural Landmark by the National Park Service.
8. Whiteley Peak - prominent peak located adjacent to U.S. Highway 40 near Muddy Pass north of Kremmling.
9. Sheep Mt. - prominent peak located west of Walden, near Lake John.

In general the topography of the resource area poses no major management problems. Steep slopes limit uses and development in certain areas. Slopes over 40 percent restrict timber harvesting and cause road construction problems. Slopes over 50 percent constrain livestock grazing in certain areas.

Specific areas where steep topography restricts certain uses or development are:

1. Upper Troublesome - north of Kremmling, Colorado, steep slopes into Rabbit Ears Creek and Troublesome Creek.
2. Radium Area - steep drainage of Colorado River and its tributaries near Radium, Colorado.
3. Drowsy Waters-McQueary Creek - located north of Colorado River west of Granby - steep benches and drainage.
4. Strawberry Area - located east of Tabernash, steep tributaries of the Fraser River
5. Sheep Mt. - steep ridge located west of Walden.
6. Laramie River - steep valleys of tributaries of Laramie River, steep benches adjacent to the river and steep slopes on side of Bull Mt.

Resource Area Boundary

Figure 2 - 1. Topography of the Kremmling Resource Area

Figure 2 - 2. Typical View of North Park

Figure 2 - 3. Typical View of Middle Park

CLIMATE

The resource area's climate is characterized by long, cold winters and short, cool summers with low to moderate precipitation. The precipitation varies throughout the area but is closely correlated to the elevation. The park floor areas receive the least precipitation, with the quantity increasing as elevation increases. The prevailing winds are westerly but are greatly affected by local topography. The growing season is short but varies widely in the area. Fluctuations of temperature and precipitation from year to year are often quite dramatic.

Temperature

Seasonal temperature ranges in the area are drastic. Summer temperature extremes may reach the upper 90's (F), while winter temperature extremes may go below −50°F. The elevation also affects the temperature. During the summer, higher elevation land may be 10 or more degrees cooler than the valleys or park floors. Winter inversions can cause the valleys to be much cooler than the surrounding higher areas. Daily fluctuations can be dramatic, especially during the early summer and early fall months. Daily temperatures may go from the 80's during the afternoon to near or below freezing (32°F) at night. The cold winter temperatures may limit the 0field season and recreation activities. However, the cool summer temperatures make hiking, camping, hunting, and fishing very popular activities in the area.

Growing Season

The growing season ranges from an average of 6 days at Fraser to 89 days at Bond. (Bond no longer has a reporting station and the length of growing season was taken from old records, but the average should still be valid.) These ranges are for a 32°F freeze level. The length of the growing season at various freeze levels for Walden, Kremmling, and Fraser is shown on Table 2-1.

The short growing season severely limits the type of vegetation, amount of annual growth, and length of the field season for vegetation inventories. Species selection for revegetation of disturbed areas is limited to those plants that can withstand both the short growing season and low precipitation.

TABLE 2-1 -- Growing Season in Walden, Kremmling, and Fraser, Colorado

Temp. (°F)	Mean Date of Last Spring Freeze	Mean Date of First Fall Freeze	Mean Freeze-Free Days
	Walden		
32	Jul 5	Aug 7	33
28	Jun 16	Aug 22	67
24	May 29	Sep 6	100
20	May 14	Sep 11	120
16	May 4	Sep 26	145
	Kremmling		
32	Jul 5	Aug 23	50
28	Jun 17	Sep 4	788
24	Jun 9	Sep 6	90
20	May 16	Sep 24	131
16	Apr 27	Oct 4	160
	Fraser		
32	Jul 17	Jul 23	6
28	Jul 9	Aug 3	25
24	Jun 18	Aug 19	61
20	Jun 1	Sep 1	92
16	May 9	Sep 13	127

Source: Benci & McKee 1977.

Precipitation

The area receives low to moderate amounts of precipitation. The amount is closely related to the elevation, with the precipitation increasing as the elevation increases. This rate of increase ranges from 5 to 15 inches per 1,000-foot rise in elevation for the area.

There is also a seasonal variation that is correlated to elevation. The lower park floor areas receive about equal precipitation from May to October and November to April, while the higher elevations receive more during the November to April period.

Local topography can also affect the amount of precipitation due to rain shadows or channeling of storms. Kremmling and Walden are located in a rain shadow. These rain shadows are caused by precipitation falling on the west (windward) sides and summits of nearby mountain ranges. As the storm moves across the east side there is little precipitation remaining. The Grand Lake area is a good example of the channeling effect that topography can have. Grand Lake reporting station 1 NW receives about 6 inches more precipitation than Grand Lake 6 SSW even though they are only about seven miles apart.

Summer precipitation is usually produced by convective thunderstorm activity. These storms seldom cause heavy rainfall or hail (see Table 2-2).

TABLE 2-2 -- Precipitation in the Kremmling Resource Area

Station	Annual Precip.	Average Monthly Maximum	Average Monthly Minimum	Days with Precip.			Days With Hail
				>.2"	>.5"	>1.0"	
Spicer 2NE	13.9"	1.5"Aug	0.9"Feb	47	4	< 1	5.8
Walden	9.6"	1.2"Aug	0.4"Feb	33	3	< 1	.5
Kremmling	11.3"	1.5" Aug	0.5" Feb	41	3	< 1	.7
Grand Lake 1NW	20.2"	2.4" Aug	1.0" Oct	66	7	< 1	--
Grand Lake 6SSW	14.2"	1.8" Aug	0.8" Feb & Nov	45	3	< 1	--
Fraser	19.6"	1.8" Apr, Aug & Sept	1.2" Oct	63	6	1	--
Bond *	12.1"	1.7" Sep	0.5" Jan & Feb	38	4	1	--

Source: Colorado Climatologist Report 77-1 except (*) Siemer 1977.

The 100-year return period is an indicator of the chance of a severe storm occurring. The 100-year return period 24-hour precipitation is 2.4 inches for Walden and 2.6 inches for Kremmling (McKee, personal communication). These amounts are very low and indicate that heavy rain storms are rare in the area. The summer thunderstorms that occur seldom have much lightning and dry lightning storms are uncommon, so the fire hazard from lightning strikes is low.

Winter precipitation comes in the form of snow. The snow is normally a very light, dry powder type with a low moisture content. The SCS runs snow courses at numerous locations in and around the area to determine snow depth and water content (see Table 2-3).

TABLE 2-3 -- Average Snowpack in the Kremmling Resource Area

Drainage	Station	Elev.	Feb. 1		March 1		April 1		May 1	
			SD	WC	SD	WC	SD	WC	SD	WC
North Platte	Columbine Lodge	9165'	53	14.5	64	19.9	65	23.2	50	20.7
Colorado	Gore Pass	8900'	27	6.5	32	8.5	34	10.1	22	7.7
Colorado	Granby	8700'	23	4.9	26	6.6	26	7.3	13	4.4
Colorado	Grand Lake	8600'	27	5.2	32	7.1	32	8.3	17	5.0
Laramie	McIntyre	9100'	29	7.9	36	9.3	39	11.2	32	10.4
North Platte	Northgate	8500'	18	4.0	23	5.4	23	6.2	13	4.1
North Platte	Parkview	9200'	27	6.0	31	7.6	34	9.1	22	6.8
Laramie	Roach	9400'	43	11.5	52	15.0	61	18.2	61	19.5
Colorado	Willow Cr. Pass	9500'	32	7.8	38	10.2	42	12.2	31	10.8

SD = Snow Depth (inches)
WC = Water Content (inches)
Source: USDA - SCS 1977

The snowpack in the high elevations usually begins to develop by October and does not begin to melt until late April, with melting continuing through late June. The annual snowfall in some areas may exceed 20 feet (uncompacted) during the winter. The snow is compacted by settling and blowing.

Deep snow restricts animal movement and vehicular travel in many areas. Land used for grazing of livestock is often snow covered during the winter, so animals must be moved down to lower elevation areas, such as hay meadows, and fed hay to survive through the winter. Wildlife, especially deer and elk, must also move down to areas where their browse is not covered by snow. The field season and activities of land managers are

also restricted by snow. Snow does provide for various forms of recreation, such as downhill and crosscountry skiing, snowmobiling, and snowshoeing.

The snowpack provides a major water source for domestic, industrial, and agricultural use. Most cities and towns rely on rivers or streams to supply their municipal water needs. Some of the run-off from the melting of the snowpack is diverted to communities east of the Continental Divide. Ranchers in the area use the run-off for irrigating their hay meadows.

Low precipitation years occur fairly regularly. All vegetative growth can be severely affected by a lack of adequate moisture during the critical growth period in May and June. This can affect livestock grazing areas, wildlife browsing areas, hay meadow output, tree growth, and regeneration and revegetation success. Domestic water supplies can be reduced, resulting in restrictions on water use by households and industry. The Colorado River is used for river rafting by numerous commercial outfitters; low water decreases the length of the floating season and the quality of the float trip.

Air Movement

The prevailing winds in the area are westerly, although local topography can affect surface wind patterns. The winds are generally strongest in the spring.

The North Park area is known for its nearly continuous, year-round winds. The velocity is highest in late winter and early spring and can cause ground blizzard conditions. Winds in the North Park area are usually light to moderate during the rest of the year.

The Middle Park area is more affected by topography and its channeling of the surface winds. The velocities are usually highest in the spring. The range of average monthly wind speeds at Grand Lake 6 SSW is from 2.9 to 4.6 mph and at Green Mountain Dam from 1.3 to 3.8 mph (Siemer 1977).

Another form of air movement common to the area is the "air tide". Air tides occur on calm days and nights and are caused by the heating of the earth's surface. During the day the surface is warmed, causing a layer of air near the surface to warm and move upslope or upvalley as this warmed air rises. During the evening the flow reverses as the surface cools, causing the air layer to cool and flow downslope or downvalley.

Valley inversions are caused by cold, dense air settling into these low-lying areas during the nighttime air tide movement. Inversions occur throughout the year but are most severe during the winter months. Inversions occur most frequently at Fraser, as the short growing season and cold temperatures indicate. Kremmling, Granby, Hot Sulphur Springs, and Walden also have inversions regularly during the winter. No data has been collected on these local inversions, but the size of the valley and its shape affect the depth of the inversion. During the summer the inversions disperse in the later morning, but during the winter they may remain for several days and possibly a week or more.

Other Climatic Factors

Relative humidity is closely correlated to precipitation, evaporation and temperature. During the summer months the relative humidity may be as low as 10 percent, though the average is about 25 to 35 percent during the afternoon and slightly higher in the evening and early morning. The relative humidity is about 40 percent during the rest of the year.

Evaporation data for the area is available for Grand Lake and Green Mountain Dam (13 miles south of Kremmling). The Grand Lake area has a mean evaporation of approximately 37 inches from May to October and the Green Mountain Dam about 33 inches (U.S. Dept. of Commerce). The evaporation rates are much higher than the amount of precipitation the areas receive, indicating possible plant moisture stress problems during dry years.

Solar radiation data for the area does not exist at the present time. McKee et al. (1980) say that the summer cloudiness throughout the state is quite consistent and estimate that about 2300 BTUs per square foot per day reach the surface of North Park. The potential for solar energy use in the area is not yet known due to the lack of data.

AIR QUALITY

The air quality of the area is believed to be very good. There are no known or suspected amounts of pollutants in excess of Federal or state standards. The visibility within the area is also very good.

The resource area is located within Air Quality Control Region (AQCR) Number 12 of the State of Colorado. According to Environmental Protection Agency (EPA) designations, the air quality of AQCR Number 12 is as follows:

TSP (Total Suspended Particulates): Better than national standards
Sulfur dioxide: Better than national standards
Oxidants (including ozone): Cannot be classified, or better than national standards
Carbon monoxide: Cannot be classified, or better than national standards Source: 40 CFR 81.306

Air quality data for the area is very limited. There are no known existing air quality monitoring sites in the area and, therefore, the information in this section is based on generalizations and some local observations.

Air Quality Protection

The Clean Air Act Amendments of 1977 established a classification system to encourage the 'prevention of significant detorioration' (PSD) of air quality in areas where the air is cleaner than the National ambient standards. PSD Class I areas permit only minor increases in SO2 and TSP levels above baseline amounts; PSD Class II areas permit moderate increases in these pollutants; and PSD Class III areas permit the greatest increases, but under no circumstances are increased pollutant levels to exceed the National Ambient Air Quality Standards. Additionally, certain PSD Class I area managers have demonstrated visibility and other air quality related values to be important factors to be protected.

There are four areas adjacent to the Kremmling Resource Area that have been established as manadtory PSD Class I areas which require the most stringent air pollution controls. These areas are listed in Table 2-4 with their administering agencies and acreage.

TABLE 2-4 -- Class I Air Quality Areas

Name	Agency	Acres
Eagles Nest Wilderness Area	U.S. Forest Service	133,910
Mount Zirkel Wilderness Area	U.S. Forest Service	72,472
Rawah Wilderness Area	U.S. Forst Service	26,674
Rocky Mountain National Park	National Park Service	263,138

Source: 40 CFR 81.406

Although these wilderness areas continguous to the Resource Area have PSD Class I air quality status, new and future wilderness designation does not carry with it mandatory reclassification to PSD Class I. It is the perogative of the State or Congress to reclassify areas PSD Class I, and not the Federal Land Manager. It is Department of the Interior policy not to recommend PSD Class I reclassification for any wilderness recommendations resulting from the BLM wilderness review.

There are several recently established wilderness areas and additions to existing wilderness areas which could be redesignated PSD Class I by Congress or by the State of Colorado. These areas are listed in Table 2-5 with their appropriate acreages. All are administered by the U.S. Forest Service.

TABLE 2-5 -- Potential Class I Air Quality Areas

New Wilderness Areas	*(acres)*
Comanche Peak Wilderness Area	67,500
Indian Peaks Wilderness Area	9,900
Neota Wilderness Area	71,400
Never Summer Range Wilderness Area	14,100
Additions	
Mt. Zirkel Wilderness Area	32,500
Rawah Wilderness Area	49,720

All are administered by the U.S. Forest Service.
Source: Pedco 1981

PSD Class I areas east of the Resource Area are of particular concern due to potential restrictions on development in order to meet the stringent air quality standards. Since the prevailing winds are from the west, development could be restricted by the regulatory authority to facilities that would not affect the air quality in these PSD Class I areas (particularly Rawah Wilderness and Rocky Mountain National Park).

Sources of Pollutants

There are several sources of TSP located in the area. Teepee burners at sawmills in Walden, Kremmling, Granby, and Fraser and open burning at a small sawmill in Kremmling are used to dispose of wood product wastes. This burning creates smoke and particulate matter in the local areas and, to some extent, downwind. Due to the current popularity of wood burning stoves and fire places, additional smoke and particulates are produced in the towns during the winter months. During the fall and early winter the U.S. Forest Service and BLM burn slash piles and conduct broadcast burning of slash on timber sale areas in and around the resource area. This slash burning is conducted during good smoke dispersal conditions only.

The amount of TSP emitted by the burning of wood in the area is not known. The effect the TSP have on the air quality of the area is also not known but is not expected to be in excess of allow-

able standards except during some inversion periods. The smoke does create a visibility problem in the local areas during inversion periods.

Inversions

The inversions that occur in the lower areas can trap pollutants and particulates that could pose a possible health hazard. The inversions are most severe during the winter months. This is also the time when the most smoke and particulates are present from burning wood. The inversions trap the smoke and particulates as well as any other pollutants (such as exhaust emissions) that are present. The concentrations of pollutants are the highest when the inversion ceiling is lowest because there is a smaller volume of air to contain the pollutants. These inversions may limit the type of development within the area to those facilities that would not produce pollutants that would pose a health hazard during inversions.

GEOLOGY

The Kremmling Resource Area is located in the Middle Rocky Mountain region. It consists of mountainous terrain (9,000-12,000 feet) surrounding two lower level basin areas (North and Middle Parks). Only these areas are of concern in this document. No surrounding areas (primarily National Forest) have been considered.

This section identifies the structures (geologic features) and stratigraphy (rock units) that are important sources of mineral values and geological hazards. Of additional importance is the geologic history of the area for the location of valuable paleontological (fossil) resources. The information gathered is based exclusively on a search of available literature. Maps showing the surface geology, mineral, and paleontologic resources may be examined in the Kremmling Resource Area Office.

Geologic History

The geology of the Kremmling Resource Area is represented by a cross section of all the time periods since the original cooling of the earth's crust. Mountain building activity occurred during the Permian and Cretaceous time periods. The later episode resulted in the uplifting of the present Rocky Mountains. The mountain building activities resulted in the formation of the large, northward trending open syncline between the Park Range on the west and the Medicine Bow and Front Ranges on the east. The syncline is separated into two topographic basins (North and Middle Parks, see Figure 2-1) by the eastward trending Rabbit Ears Range (Tweto 1957). Folding and faulting during Tertiary time were the direct result of volcanic activity in the mountain ranges (Izett 1966).

The Cretaceous uplift of the Rocky Mountains, Tertiary volcanism and subsequent glaciation (Pleistocene), and natural erosion have resulted in the topography and geologic structure as we see it today (Tweto 1976, 1978).

Mineral Resources

Coal

Valuable mineral deposits are very evident in the North Park region. The McCallum Known Recoverable Coal Resource Area (KRCRA) encompasses a large portion of North Park. Coal production is from the Coalmont Formation. Active mining can be seen east of Walden and past mining is in evidence near Coalmont.

Oil and Gas

Along the McCallum Anticline in North Park, valuable deposits of oil and gas are presently being produced. Primary production is from the Dakota Sandstone, which is found north of Walden, Colorado (Newton 1957).

Uranium

Considerable exploration for uranium has been done in recent years in the Middle Park area. Exploration is concentrated in the Morrison, North Park, and Troublesome Formations. These formations are exposed or near the surface in much of Middle Park (Carr 1977; Izett, Barclay, and Venable 1973).

Other Minerals

Gold, silver, copper, and fluorite discoveries and production have been intermittent since the late 1880s. Very low metals production levels exist today. The two recorded fluorspar mines are not presently in operation (Colorado Div. of Mines 1970-1973).

Sand and Gravel

Sand and gravel is consistently being used for construction and road maintenance. Most of this production comes from glacial deposits scattered throughout the Kremmling Resource Area (Carr 1977; Bartell 1974).

Geothermal

There are four known areas of a geothermal nature occurring in the resource area: (1) a three-mile square area on the west side of North Park (Hail 1975), (2) an area three miles west of Delaney Butte, (3) Hot Sulphur Springs (Izett 1968), and (4) Sulphur Gulch. The potential for geothermal development in these areas is unknown, since only preliminary exploration has been done.

Paleontology

Table 2-6 outlines fossil locations and fossil classifications for the resource area. The formations of significance are primarily those having vertebrate fossils (North Park, Troublesome, and Morrison Formations). Significant fossil finds are the only fossils that are legally protected (Antiquities Act of 1906 - P.L. 59-209; 34 Stat. 225; 16 USC 432, 433).

TABLE 2-6 -- Paleontological Resources

Fossil Type	Fossil Names	Rock Formation	Rock Type	Time Period	Millions of years	Fossil Classification
Vertebrates						
1. Skeletal parts, jaws, and skulls	Merychippus, Brachychrus, Ustatochoerus, Eucaster, Pliauchenia	North Park Fm. and Troublesome Fm.	Sandstone, siltstone and conglomerate with a few volcanic ash layers	Tertiary (Miocene)	10-30	Ib
2. Fossil teeth	Titanothera	White River Fm.	Light colored soft tuffaceous siltstone and claystone	Tertiary (Oligocene)	30-45	III
3. Dinosaur bone fragments	Saurischian	Morrison Fm.	Variable colored shales and sandstone	Jurassic	135-180	Ia
4. Bone fragments	Unknown	Chinle Fm.	Calcareous siltstone, sandstone and mudstone	Triassic	180-200	II
Invertebrates						
1. Marine Inv. fragments	Baculites, Inoceramus, Ammonite	Pierre Shale	Dark gray marine shale with a few fine grained sandstone	Cretaceous	70-85	II
2. Marine Inv. fragments	Ostrea, Inoceramus, Baculites	Niobrara Limestone	Calcareous shale with a basal limestone	Cretaceous	85-100	II
3. Marine Shells	Inaceramus Ammonite	Benton Shale	Dark bentonite shale	Cretaceous	100-200	II
4. Marine shell and fish scales	Inoceramus, Fish-unknown	Dakota Sandstone	Light colored sandstone or quartzite	Cretaceous	120-135	II
5. Marine shell	Ostra codes, Pelecypods, Gastropods	Morrison Fm.	Variable colored shales and sandstones	Jurassic	135-180	II
6. Burrow casts	Sp-unknown	Chinle Fm.	Calcareous siltstone, sandstone and mudstone	Triassic	180-200	II
7. Marine Inv. fragments	Corals, Brachiopods, Foraminifera	State Bridge and Minturn Fms.	Variable colored sandstone and siltstone, coral reefs found in Minturn Fm.	Pennsylvanian/ Permian	225-310	II
Plants						
1. Leaves and pollen	Platanus, Viburnum, Amporopsis	Middle Park Fm.	Sandstone, conglomerate and mudstone with abundant volcanic detritus	Tertiary (Eocene)	45-60	II
2. Pollen	Sp. unknown	Coalmont Fm.	Sandstone, conglomerate and certanaceous shale-coal beds	Tertiary (Paleocene)	60-70	III
3. Carbonized remains	Sp.-unknown	Dakota	Light colored sandstone or quartzite	Cretaceous	120-135	II

Source: Newton 1957, Tweto 1957
Key to Fossil Classification
I. Fossils Unlikely
II. Evidence of fossils, but none of scientific value anticipated
III. Fossils of scientific value present or very likely
a. Most imporatnt (Morrison formation)
b. Very important (North Park and Troublesome formations)

Specific vertebrate fossils which are potentially significant are the mammal skeletons of the North Park and Troublesome Formations and the dinosaurs (Saurischian) of the Morrison Formation. The only known significant invertebrate fossil location is the Kremmling Cretaceous Ammonite site in the Pierre Shale or Benton Shale. This site is located approximately seven miles north of Kremmling and has potential for management as an area of critical environmental concern (ACEC), research natural area (RNA), or outstanding natural area (ONA).

Geologic Hazards

Landslides

The type of terrain conducive to landslides is a combination of moderately coherent masses of material and a relatively steep incline. Major landslides occur in the portions of the Troublesome and Middle Park Formations containing soft tuffaceous (ash) rocks rich in clay. Less frequent slides occur within the Morrison, Dakota, and Niobrara Formations and the Benton and Pierre Shales. Areas susceptible to landslides are evidenced by a rippling surface on a valley slope or hillside.

Landslides can be triggered by seismic disturbances (earthquakes), heavy precipitation or adjacent water seepage, and the undercutting of ordinarily stable slopes by both natural erosion or the works of man (Colton et al. 1975a, b).

Areas in the resource area which are susceptible to landslides are the Granby Anticline, the Hot Sulphur Springs area, and steeply inclined sediments along the Park Range.

Swelling Clays

Swelling clays produce stress forces of a magnitude that can seriously affect the structural integrity of bridges, pipelines, buildings, and other developments. Swelling clays are known in the Benton and Pierre Shales and portions of the Troublesome Formation.

Subsidence

Subsidence is common where man has removed large volumes of fluid or masses of subsurface material. These factors exist on lands over and near active oil and gas fields and in coal mining (primarily deep shaft) areas near Coalmont and east of Walden.

Seismicity and Faults

Seismicity and faults are considered a minor risk in Colorado. This rating results from no major earthquakes or fault movement being observed in the last 100 years.

SOILS

The soils of the Kremmling Resource Area are cold, with a mean soil temperature less than 47°F (8°C). Because of low temperatures, the chemical reactions which release plant nutrients from minerals take place slowly. The rate of biologic activity is also limited by temperature, which results in a slow rate of biologic decomposition, seed germination, and root growth. These factors combine to give the soils low fertility.

Soils in the resource area generally do not receive moisture during the growing season. Therefore, the ability of the soil to store moisture from winter precipitation is critical to site productivity. Fine textured soils (greater percentages of silt and clay) store more moisture than coarse textured soils.

The most productive soils in the resource area are those in valley bottoms and at higher elevations. The valley bottoms receive additional moisture because they concentrate runoff from adjacent uplands and because water will percolate laterally into the subsoil from stream channels. Most valley bottoms support grass hay production.

Areas at higher elevations receive a greater amount of precipitation during the growing season. These areas support commercial and noncommercial forests. Areas between the hay meadows in the valleys and the forested areas are rangeland, which are generally less productive. Rangeland with the least productive potential occurs on steep slopes which are exposed to high winds and intense sunlight.

For planning purposes, the soil surveys of Larimer, Jackson, Grand, and Summit Counties and the Aspen-Gypsum area can be used. These soil surveys were prepared by the Soil Conservation Service and are available at the Bureau of Land Management offices in Kremmling and Craig, Colorado. The Larimer County, Jackson County, and Summit County surveys have been published. The remainder are in manuscript and subject to revision. It should be noted that site-specific soil investigations may be required for the proper location and design of improvements requiring soil disturbance.

Over 117 soil series have been identified in the Kremmling Resource Area. A detailed description of these is available at the Kremmling Resource Area Office.

Erosion

In order to preserve site productivity, erosion rates must be balanced with the rate of soil formation. If this is not done, maintenance of sustained yield is not possible.

During the range condition inventory conducted in the summer of 1980, erosion condition was assessed. A soil surface factor (SSF) was determined for each site write-up area in which a transect was taken. This SSF is based on visual evidence of soil movement. It does not assess erosion hazard. Erosion condition reflects the intensity of past land use as well as soil and vegetation factors. An area in stable erosion condition has not been abused, but may have high erosion hazard. Erosion hazard is an estimate based on soil properties of how a site will react if the site is disturbed.

The SSF is a subjective rating of present erosion condition. It is used to flag problem areas. When the SSF is less than 40, the site is considered to be stable or to have slight erosion taking place (soil loss is within soil loss tolerance). In areas where SSFs were greater than 40, further analysis was conducted, using the Universal Soil Loss Equation (USLE). The value obtained from USLE was then compared to the soil loss tolerance. The soil loss tolerance is a value determined by the Soil Conservation Service for the soil. It is based on soil depth and given in terms of tons per acre per year.

When the calculated erosion rate was less than the soil loss tolerance, the site was described as having moderate erosion not presently affecting site productivity. When the calculated erosion rate was greater than the soil loss tolerance, the site was described as having severe erosion affecting site productivity. These areas are shown in Table 2-7.

Table 2-7 -- Erosion Condition

Land Status	Stable or Slight	Moderate Erosion	Severe Erosion
Ac. Public Land	271,600	13,700	19,700
Ac. Other Land	172,100	10,600	4,800

Generally, SSF's are less than 40 on timbered sites and irrigated meadows. Some areas in rangeland have SSF's of less than 40 as well; these are generally located on level to gently sloping landforms. Areas with SSFs greater than 40 are generally located in rangeland where slopes are steep. Along Route 40 west of Kremmling, Colorado, an area with SSF greater than 40 can be seen. This erosion is a result of human activity on an unstable soil. Not all areas with poor erosion condition result from the impact of human activity. For example, the badlands northeast of Cowdry, Colorado, are geologic in origin.

Overuse of the land can cause SSF's to be greater than 40. It may take many years for the evidence of this overuse to be erased.

Alluvial Valley Floors

Alluvial valley floors are areas where streams have deposited sediment over long periods of time. This has created areas that are particularly well suited for flood and subirrigated agricultural activities, given the fact that some deposits act as reservoirs for water. The water holding capacity of the soil can be high, with deposits being as much as 20 feet deep.

In the Kremmling Resource Area almost all perennial streams are associated with alluvial valley floors. These are important to agriculture because almost all hay produced in the resource area is grown on them. This hay is very important to ranching operations because it provides the forage needed to maintain herds over the winter. Alluvial valley floors that are significant to agriculture where the mineral estate is in Federal ownership in the McCallum Known Recoverable Coal Resource Area have been identified through application of the coal unsuitability criteria.

In the Surface Mining Control and Reclamation Act of 1977, Congress specifically states that alluvial valley floors in the arid and semiarid west are to be protected from surface disturbance associated with surface mining. All surface disturbing activity which may affect alluvial valley floors must be carefully considered so that the present level of agricultural production will be protected.

WATER RESOURCES

The water resources in the resource area consist of the streams forming the headwaters of the North Platte and Colorado Rivers as well as many springs and several large reservoirs. Heavy snowfall results in a high spring runoff in May and June. The streams reach a base flow by August or September and remain at this level through the winter.

A baseline survey was conducted in 1980 to determine basic water quality parameters and water quantity. Field data from these surveys is filed in the Kremmling Resource Area Office. With few ex-

ceptions, the overall water quality in the resource area is good. However, since this data was verified based on a one-time field check, there may be seasonal problems that are not apparent.

Surface Water Resource

The headwaters of the Colorado River drain Middle Park. The Colorado River watershed has an area of 2,654 square miles in the resource area and ranges in elevation from 6,700 to 13,000 feet above sea level. Only 10 percent (266 square miles) of the watershed area is under BLM management.

Most of the streams in Middle Park originate in the surrounding mountains. They have very high gradients, falling several hundred feet per mile until they reach the 8,000 foot elevation mark. At this point the gradients are less steep and the streams start to meander. As the streams flow out of the mountains, they pass through relatively insoluble geologic formations, resulting in soft water. For example, Crystal Creek is located at a high elevation and has the lowest readings for calcium, magnesium, sodium, bicarbonate, and conductivity in Middle Park.

The Colorado River and its tributaries in the resource area are affected by eight transmountain diversions. There are several large reservoirs in the resource area that are involved with these diversions. Dillon Reservoir, located on the Blue River, provides domestic water supplies to Denver. Shadow Mountain, Granby, and Willow Creek Reservoirs and Grand Lake are part of the Colorado-Big Thompson Project. This project diverts water from the Colorado River and Willow Creek to the South Platte basin for domestic and agricultural use. The Williams Fork Reservoir provides replacement storage for water diverted to the East Slope by the Denver Water Board and Green Mountain Reservoir provides replacement storage for water diverted by the Big Thompson Project. The Windy Gap Reservoir has been approved and construction began in 1981. This reservoir will provide additional water to the Big Thompson system.

Approximately 40 percent of the streamflow that would otherwise flow past Kremmling is diverted into the South Platte watershed. The average annual discharge past the USGS gauging station on the Colorado River west of Kremmling is 613,320 acre feet per year (AF/yr) after diversions. Approximately 417,850 AF/yr are diverted to the east slope of the continental divide. Upon completion of the Windy Gap Project, an additional 50,000 AF/yr will be diverted from the Colorado River.

The primary uses for the water remaining in the Colorado Basin are agricultural, e.g., hay meadow irrigation and livestock water. Recreation is a major water use; rafting on the Colorado River, fishing on the streams and lakes, and boating on the larger reservoirs are popular activities.

The North Platte River watershed covers North Park. The North Platte flows north out of Colorado as part of the Missouri River basin. Included in the North Platte basin is the Laramie River watershed. The Laramie River is separated from the headwaters of the North Platte by the Medicine Bow Mountain Range. Elevations in the watershed range from 8,000 to 13,000 feet.

Streams in the North Platte basin have a very steep gradient, falling several hundred feet per mile until they reach the open portion of the park, where the gradient is lower and the streams spread out in wide alluvial valleys. The geology of the mountains is similar to Middle Park and yields soft water. Geologic formations in the lower elevation area of North Park are more soluble and contribute more minerals to the water.

The major water uses in the North Platte basin are agricultural. Water for livestock and irrigation for hay meadows are provided.

The Michigan River provides the domestic water supply for the town of Walden. Water uses also include recreation. There are several high quality fishing streams and reservoirs in the North Platte watershed.

The average discharge for the North Platte near the Wyoming border is 312,300 AF/yr and for the Laramie River near Glendevey is 53,030 AF/yr. The North Platte and Laramie Rivers have a combined watershed area of 2,030 square miles in the resource area. Only 16.7 percent (339 square miles) of the surface area is managed by the BLM. There are seven transbasin diversions into the Cache La Poudre River that average 19,110 AF/yr. The water diverted is used for agricultural purposes, primarily irrigation, and as domestic water for cities, including Fort Collins and Greeley.

Surface Water Quality

Colorado Basin

The overall surface water quality in the Colorado River watershed is good. There are a few exceptions, such as the Muddy Creek drainage, which has several tributaries that flow through geologic formations that contain soluble sodium and sulfate compounds. This increases the surface water salin-

ity. The Colorado River Salinity Control Act of 1974 requires BLM to assist in reducing salinity input to the Colorado. In addition to the Muddy Creek drainage, there are several springs, including Sulfur Gulch Spring and Sulfur Dump Spring, that have high sodium and sulfate levels. In some cases these springs feed streams that flow into the Colorado River. In other cases they merely serve to bring the salts to the surface.

Selected water samples were analyzed for five metals: lead, molybdenum, arsenic, mercury, and selenium. In all surface waters sampled, levels of these metals were within EPA and state allowable levels.

Water pollution is not a large-scale problem in Middle Park. The only point sources of pollution along the Colorado and its tributaries are municipal waste plants. Nonpoint source pollution is common in the form of agricultural runoff. This type of pollution contributes relatively large amounts of nitrogen and suspended sediments to the surface waters. Springs were sampled as part of the surface water sites during the 1980 inventory. With the exception of a few that are highly saline, the springs had good water quality.

North Platte Basin

The surface water quality in the North Platte basin is good. The geologic formations of North Park are less soluble than the formations in Middle Park. Therefore, the high values (extremes) for North Park (Platte River basin) are lower than the high values in Middle Park (Colorado River basin). With a few exceptions, the springs in North Park also have good water quality. The water meets or exceeds EPA standards, except for mercury in some springs. There are several naturally occurring forms of mercury, with some types being more toxic than others.

Because mercury can accumulate in animal tissues, the EPA standards are strict. A level of less than 0.001 milligram/liter (mg/l) in livestock water is considered acceptable (EPA 1976). No streams in North Park had levels above 0.001 mg/l; however, eight springs had values that ranged from 0.002 mg/l to 0.008 mg/l. These springs could have an adverse effect on livestock using them if this level of mercury was constant.

The pollution that occurs in the North Platte basin is similar to that found in the Colorado River basin. Agricultural runoff is the major component. In addition, some of the operating oil wells in Jackson County produce oily water which must be stored and falls under wastewater effluent regulations.

Floodplains

Floodplains in the Colorado River basin are not very wide because most of the streams flow through steep, narrow valleys. In addition, four of the five major drainages are regulated by one or more dams, which reduces the probability of flooding. Muddy Creek, which is not controlled by a dam, is subject to spring flooding. The major streams and rivers in the North Platte basin are not regulated by any dams. These streams are subject to spring flooding, but because of the wide alluvial valleys through which they flow, little damage is done. Table 2-8 shows the 100-year frequency flood level for five North Park streams.

Table 2-8 -- 100-year Frequency Flood Levels for Five North Park Streams

Stream Name	Feet Above Point of Zero Flow
Little Grizzly Creek	4.2
Grizzly Creek	5.6
Canadian River	5.4
Michigan River	5.4
North Platte River	7.9

Flood levels were determined using data from USGS publications and a *Manual for Estimating Flood Characteristics of Natural Flow Streams in Colorado* by McCain and Jarret.

National Resource Waters

National resource waters are those that fall into the high quality classification as determined by the Colorado Department of Health Water Quality Control Commission. None of the streams in the resource area falls into this classification. Several streams within the national forests and in Rocky Mountain National Park do meet this standard.

Municipal Watersheds

The towns of Granby, Fraser, Tabernash, and Winter Park obtain their water from the Fraser River. Hot Sulphur Springs obtains water from the Colorado River. The town of Kremmling obtains its domestic water supply from Sheep Creek west of town. Within these municipal watershed are public lands. These watersheds are affected by the management of public lands. The town of Walden in North Park obtains its domestic water supply from the Michigan River. Portions of the Michigan River

watershed fall into the known recoverable coal resource area (KRCRA).

Groundwater Resources

The geology and groundwater hydrology of North and Middle Parks is very complex. Unlike the eastern portion of Colorado, there are no large, well defined aquifers that yield large volumes of groundwater. Most of the groundwater is found either in alluvial aquifers, as might be found along the North Platte or Colorado Rivers, or in isolated pockets of porous sedimentary rocks. These latter sources are not considered aquifers because of their limited extent, great depth of burial, or probability of being drained (Voegeli 1965).

Aquifers and groundwater sources are recharged primarily by infiltration from streams and percolation of precipitation (Voegeli 1965). Both North and Middle Parks have essentially closed groundwater basins. Very little ground water moves out of the basins. Groundwater quality and quantity is adequate for both domestic and livestock use. It is infrequently used for irrigation.

Groundwater Sources

Most of Middle Park is underlain with rock that is capable of yielding only small amounts of water. The alluvium is the principal source of groundwater, yielding supplies adequate for domestic and livestock use. Most of the formations are nearly impermeable to water, which reduces the amount of groundwater. In some areas, however, these formations are faulted and fractured so that some groundwater is stored. Sedimentary rocks of the Tertiary system yield good water when the primary constituents of the formation are sandstone, sand, gravel, or boulders (Voegeli 1965).

As with Middle Park, the alluvium is the principal groundwater source in North Park. In addition, glacial deposits and sandstone areas in the North Park and Coalmont formations yield adequate water for domestic and livestock use. The Coalmont formation and alluvial deposits are the most dependable sources of groundwater.

Groundwater Quality

The groundwater quality of the Colorado and North Platte River basins is good. As with the surface waters, selected wells were sampled for lead, molybdenum, arsenic, mercury, and selenium. In Middle Park, only one well had a reading that exceeded state standards for lead. This well had a lead level of 0.2 mg/l; the state standard is 0.04 mg/l. If future checks reveal a continuing high level of lead from this well, it may be necessary to restrict its use as a water source.

Eight wells sampled in North Park had mercury levels ranging from 0.002 mg/l to 0.008 mg/l. This exceeds the EPA recommendation of .001 mg/l of mercury in livestock water. If future samples continue to show high levels of mercury, it may be necessary to restrict these wells as water sources for livestock.

VEGETATION

Vegetation Classification and Inventory

The vegetation in the Kremmling Resource Area can be divided into four land site classifications: croplands, wetlands, rangelands, and forest lands. All of these are well represented throughout the two major geographic regions in the resource area, Middle Park and North Park (including the Laramie River drainage.)

The land site classifications may be further divided into 13 distinct vegetation types, 4 of which account for more than 90 percent of the total vegetative cover in the resource area. These four types include sagebrush (58 percent coverage), irrigated meadow (14 percent), lodgepole pine (13 percent), and quaking aspen (7 percent).

During the summer of 1980 a range condition inventory was conducted in the resource area in which all 13 vegetative types were extensively surveyed. This inventory, allowed for the more specific mapping of vegetation types into various range sites. Table 2-9 shows the 13 vegetation types in the area.

TABLE 2-9 -- Vegetation in the Kremmling Resource Area

Vegetation Types	Total Acreage	% of Total North Park	% of Total Middle Park	% of Resource Area
CROPLANDS				
Irrigated Meadow	173,460	18	9	14
WETLANDS				
Riparian	11,000	1	1	1

TABLE 2-9 -- Vegetation in the Kremmling Resource Area—Continued

Vegetation Types	Total Acreage	% of Total North Park	% of Total Middle Park	% of Resource Area
RANGELANDS				
Sagebrush	710,243	58	59	58
Mountain Shrub	15,680	2	1	1
Salt Shrub	10,159	< 1	< 1	1
Native Grasslands	31,440	3	2	3
FOREST LANDS				
Major Forest Types				
Lodgepole Pine	158,974	8	19	13
Aspen	83,180	10	3	7
Pinyon-juniper	16,400	< 1	3	1
Other Forest Types				
Spruce/Fir	6,623	< 1	1	< 1
Douglas Fir	4,833	< 1	1	< 1
Ponderosa Pine	330	< 1	< 1	< 1
Limber Pine	130	< 1	< 1	< 1
Total North Park:	687,382	--	--	--
Total Middle Park:	535,000	--	--	--
Total Resource Area:	1,222,382	--	--	--

During the course of the inventory approximately 452,200 acres of vegetation were mapped and surveyed. A total of 243 plant species were identified and characterized (46 trees and shrubs, 57 grass species, and 140 forbs.) Many of the important forage species were evaluated in each range site as to their age, growth form, condition, annual production, and availability to primary grazers (domestic livestock and wildlife). This information has been computer catalogued and is available for review at the Kremmling Resource Area Office.

Forest inventory information has been obtained primarily from aerial photo interpretation in conjunction with varying intensity levels of on-the-ground forest surveys on BLM lands. Inventories of very low intensity were begun in 1973 and more intensive inventories are being conducted at this writing. Specific data generated from these inventories, such as forest stand evaluation through site indexing, is available at the Kremmling Resource Area Office.

Other sources were also consulted in cataloging vegetation information in concert with the inventory (Terwilligan and Smith 1978; Colorado Division of Wildlife 1978; Colorado State University).

Vegetation Distribution and Historic Use

There is a consistent trend in the distribution of the four major vegetation communities throughout North Park and Middle Park. The lower elevation basins are dominated by steppe vegetation, consisting primarily of rolling sagebrush hills and alluvial terraces formerly converted from sagebrush to irrigated meadow. At the higher elevations, this steppe vegetation gives way to expansive forested areas dominated by lodgepole pine.

This elevational trend, which contrasts the more xeric vegetation of the lower regions with the aspen-coniferous forests of the higher country, varies significantly throughout the parks with respect to slope exposure. For example, sagebrush communities may often be found at higher elevations on the drier, southern exposures, and aspen-coniferous forest may be found scattered throughout lower elevations on the moisture-rich, northern exposures.

In addition to slope exposure, other natural elements, such as a short growing season, a varied complex of soil types, and the occurrence of wildfires, have strongly influenced the development of these vegetation communities. Substantial modification to these communities has also been induced by man in the form of extensive timber harvesting and the introduction of livestock grazing within the last 100 years. In the case of livestock grazing, heavy, repeated use has diminished or eradicated several plant species from their preferred habitat.

Discussion of Vegetation Types

The following is a description, of the 13 vegetation types found within the resource area.

Croplands

Irrigated Meadow Approximately 14 percent of the land in the resource area consists of irrigated river bottoms, terraces, and benches which have largely been converted from sagebrush to hay pasture. The major forage crops produced on these primarily private wetlands are the stable hay grasses which provide critical winter feed for livestock. Included among these grass species, in order of importance, are Timothy, smooth brome, American sloughgrass, meadow foxtail and red top. Grass-like plants such as the sedges and rushes are also found in these meadows, often on the wetter, boggy sites.

Wetlands

Riparian The riparian vegetation type is commonly found throughout the resource area in association with river bottoms, irrigated meadows, and

upland stream courses. It is a specialized form of wetland, usually existing as fringed strips of vegetation lining a perennial or intermittent stream system. However, riparian vegetation may also inhabit broader sites, such as poorly drained salt marshes, open grasslands, or even steep, rocky canyons consisting of sparse vegetation.

The most extensive areas of riparian vegetation occur along the floodplains and river valleys of North Park, Middle Park, and the Laramie River drainage. These, as well as many upland riparian areas, consist of groves of narrowleaf cottonwood trees or often dense, continuous stands of willows. Associated understory species are wild rose, currant, bluegrass, wheatgrass, bromes, rushes, sedges, and a vast component of annual forbs. Such species are well adapted to the frequent flooding and high water tables evident during the peak spring runoff.

Although the riparian vegetation types account for only about 1 percent of the total land coverage, they are one of the most important ecological components of the local environment. They provide water and shade for domestic livestock, valuable nesting areas for raptors and other birds, and food and cover for many species of wildlife. Perhaps the most significant attributes of riparian communities are that they form an often complex biotic network with the streams along which they are found. This riparian/stream interaction is necessary to maintain acceptable water quality and suitable habitat for fish and other aquatic organisms.

Rangelands

Sagebrush Sagebrush communities comprise nearly 60 percent of the total land coverage in the resource area. However, their distribution appears to be largely restricted to the more arid, well drained regions throughout the parks. Collectively, they constitute the most characteristic vegetation of the drier valley, terrace, bench, and foothill terrain, which ranges between 7,000 and 10,000 feet in elevation.

The most common species of sagebrush in the resource area is big sagebrush, a species of which there are three nearly indistinguishable varieties. According to studies conducted in North Park by Colorado State University, the most common variety of big sagebrush is *Artemisia tridentata vaseyana*, which accounts for nearly 90 percent of all the sagebrush type (Terwilliger and Smith 1978). This variety of sagebrush may assume a number of stature types or growth forms, depending on the environmental conditions of slope, aspect, soil conditions, and wind exposure. Consequently, the overstory may vary from very open to completely closed stands.

Other sagebrush species found throughout the resource area include alkali sagebrush found almost exclusively on clay plan soils, silver sagebrush on wet sites, and the half shrubs of fringed sagewort and wormwood sagebrush. It is important to note that there is little mixing of these species except for narrow transitional zones between types.

Perhaps the most important factors influencing the range and watershed conditions within the sagebrush types are the composition, development, and density of understory plants. Depending on the range site capability, the understory vegetation varies greatly throughout the sage types. Understories generally consist of low-growing shrubs, perennial grasses, and numerous species of short-lived annual forbs. Several of the more important low-growing shrubs, which are found in association as secondary dominants or understory species, are antelope bitterbrush, rabbitbrush, snowberry, and winter fat. Most common among the key grass species are the bluegrasses, wheatgrasses, Indian rice grass, pine needle grass, June grass, and fescues.

Production of the grasses and other palatable plants within the sagebrush type is generally dependable with average amounts of precipitation and proper use. However, during a year of unseasonably low precipitation, key grass and forb species often fail to produce adequate leafy forage, and seed production may fall off dramatically. Lack of seasonal moisture is one of the single most important management problems in the sagebrush types.

Mountain Shrub The mountain shrub communities constitute only about 1 percent of the total vegetative cover in the resource area. Despite their thinly scattered distribution, they are one of the most vital rangeland types in terms of their nutrient and cover value for wildlife and livestock.

The most common areas where mountain shrub types are found are on northern exposures in snow pockets and along drainages where moisture is not a limiting factor. These areas are frequently located about midslope and may be associated with rough or steep topography.

The brush coverage within the stands is generally dispersed and open, often patchy in appearance. This condition provides a marked contrast with surrounding sagebrush and aspen types. The primary dominant shrub species within the majority of the mountain shrub stands are serviceberry and true mountain mahogany. Other shrubs scattered throughout these communities may include mountain snowberry, gooseberry, antelope bitterbrush, sagebrush, and rabbitbrush.

Salt Shrub The salt shrub communities comprise approximately I percent of the resource area and are scattered throughout the lower elevation drainage basins of North and Middle Park. These areas are characterized by heavy, poorly drained soils that accumulate salt on the surface. Such soil conditions tend to bind surface and subsurface water, making it largely unavailable to plant species. Subsequently, salt shrub communities are usually sparse, containing a poorly developed plant understory of only a few salt tolerant grass and forb species.

Among the dominant plant species of the salt shrub communities is black greasewood, a spiny shrub which may be found forming pure stands or peripherally intermixed with the less salt tolerant sagebrush. Some of the salt flat communities are dominated by a mat-forming saltbush. Primary understory species include inland salt grass, western wheatgrass, and bottlebrush squirreltail.

The primary management problem associated with the salt flat shrub communities is that they often may contain standing water or surface salt, which makes them attractive to livestock during the warm season months. Heavy grazing use is prevalent in these areas, often culminating in surface erosion and the eventual formation of gullies.

Native Grasslands The open range grasslands of the resource area consist of two elevationally distinct types, the low foothill grasslands and the more extensive high mountain meadows. The former is generally found in association with windswept, exposed sagebrush foothills along the lower stream valleys, mesas, and terraces. It is locally confined to the drier areas of rolling to steep topography, which are often characterized by poorly developed soils that may often contain a veneer of slide rock. The vegetative cover of grass species on these sites is generally low and, more frequently than not, composed of perennial increaser or invader-type grass species, such as Indian ricegrass, bottlebrush squirrel tail, Junegrass, and muttongrass.

In contrast to these sparse foothill grass types, the high mountain meadows support a diverse and well developed flora of grasses. Sustained by a predominantly gently rolling topography and rich moisture regime, these open mountain parks generate a more continuous landscape than their lower elevation counterparts. Large bunchgrasses give these sites a lush grassland aspect. Several of these major meadow grass species include Thurber fescue, blue wildrye, needlegrass, and nodding brome.

Forest

The three major forest types in the resource area are lodgepole pine, aspen, and pinyon-juniper. Together, they constitute approximately 21 percent of the total vegetation cover in the resource area and are among the most intensively managed.

Lodgepole Pine The lodgepole pine is the major coniferous species within the resource area and is found throughout most of the mountainous slopes between 8,000 and 10,000 feet. It is not only the most extensive timber type, constituting approximately 60 percent of the forest types, but is also the most important commercial forest type. Because of its economic and aesthetic values, the lodgepole pine forest is one of the most intensively managed vegetation types.

Understory vegetation in the lodgepole pine type is usually sparse and has little forage value for livestock or wildlife. Included among the most prominent understory species are russet buffaloberry, kinnikinnick, grouse whortleberry, oregon grape, and sedge.

In addition to lodgepole pine there are four other coniferous forest types that occur generally in scattered pockets throughout the resource area. Each of these types account for less than 1 percent of the total vegetation cover and, therefore, are not intensively managed. They include:

Spruce-Fir type - Englemann spruce and subalpine fir.
Douglas Fir type.
Ponderosa Pine type.
Limber Pine type.

Aspen Stands of quaking aspen are found on mountain slopes at nearly all elevations. Aspen communities constitute nearly all of the hardwood trees and account for about 7 percent of the total vegetation cover in the resource area.

Aspen can be found growing under a wide range of conditions. It is found as isolated pure stands in the sagebrush in the transition zone between sagebrush and conifer, as islands within conifer stands, as a cover crop for conifers, in mixed stands with large conifers, and along stream courses or wet areas. Cattle and wildlife are known to seek out the highly palatable brome, rye, wheatgrasses, and leguminous forbs found in the abundant understory community.

Aspen stands have largely been maintained and preserved for their scenic, recreational, wildlife, and grazing values. However, if a hardwood product industry became established within the area, commercial demand for aspen may occur.

Pinyon-juniper Due to a local difference in the temperature regime, the pinyon-juniper vegetation type is almost exclusively confined to the drier, warmer foothills in the southwest part of the resource area, between the mountainous exclosures of Gore Canyon and the river town of State Bridge. The steep and rocky terrain of this area provides a suitable habitat for pinyon pine and two species of juniper, Utah juniper and Rocky Mountain juniper.

The primary use of these pinyon-juniper woodlands has been in support of spring-summer-fall livestock and wildlife grazing. Although much of this type is inaccessible to livestock, those portions that are accessible generally contain an understory composition of shrubs and bunchgrasses which have a fair to high preference by livestock and big game.

From a commercial standpoint, pinyon-juniper trees have little value other than for firewood and fence posts. Additionally, the pinyon-juniper woodlands represent less than 1 percent of the total vegetative cover in the resource area.

Poisonous Plants

Poisonous plants are prevalent throughout the resource area, although few areas contain concentrations of poisonous species large enough to seriously threaten livestock or wildlife.

A comprehensive list of the poisonous plant species known to occur within the resource area has been prepared and is available in the Kremmling Resource Area Office. This list was derived from the Plant Information Network of Colorado State University.

Threatened, Endangered, and Sensitive Plants

There are few known locations for federally listed threatened or endangered plant species in the resource area. However, *Phacelia formosula* (scorpion plant), a member of the waterleaf family, was formally adopted as an endangered species by the U.S. Fish and Wildlife Service in the September 2, 1982, Federal Register, Vol. 47 No. 170. The scorpion plant is an annual, or possibly a biennial, that grows to be 6 to 10 inches tall. The violet flowers are arranged in clusters on stalks that look like a scorpion's tail. These scorpioid flower clusters are about 2 inches in length. This endangered species has presently been identified in two locations in North Park, although similar habitat exists for the species elsewhere throughout the park. The *Phacelia's* known habitat is a sandstone area open to direct sunlight. Associated plant species are Indian ricegrass, stickleaf, nodding buckwheat, and wild rose. These species are outlined in further detail in Table 2-10.

TABLE 2-10 -- Threatened, Endangered, or Rare Plants That May Occur in the Kremmling Resource Area

Plant Name	Status	Habitat	Associated Species
1. *Phacelia formosula*, Osterhout	Endangered Federal Register, Sept. 1982, Vol. 47, No. 170	Sandstone bluff open to direct sunlight	*Eriogonum cernuum, Mentzelia nuda, Rosa, Penstemon, Lithosperum*, and *Chrysothamnus*
2. *Astragalus osterhoutii*, M. E. Jones	USFWS Category 2 Federal Register Notice of Review Dec. 1980 Vol. 45, No. 242	Barren knolls, in gulches of denuded clayhills, gullied bluffs, stiff alkaline claysoils, and Niobrara shale	None
3. *Penstemon harringtonii*, Penland	USFWS Category 2 Federal Register Notice of Review Dec. 1980 Vol. 45, No. 242	Sagebrush community, open dry flats, and rocky knolls	*Mertensia, Artemisia, Phlox, Castilleja, Agropyron, Oryzopsis*, and *Tesquerella*
4. *Artemisia argilosa* Beetle	USFWS Category 2 Federal Register Notice of Review, December 1980 Vol. 45, No. 242	Disturbed dry soils and coal powder	*Artemisia tridentata, Artemisia cana, Sarcobatus vermiculatus*, and *Chrysothamnus*
5. *Penstemon laricifolius* ssp. *exilifolius* (A. Nels.) Keck	Sensitive, rare	Open ground in direct sunlight	None
6. *Neoparrya megarhiza* (A. Nels.) Weber	Sensitive, rare	Mixed Desert shrub, of dark grey shale	*Oryzopsis*, and *Eurotia*

WILDLIFE AND DOMESTIC LIVESTOCK

The Kremmling Resource Area provides habitat for approximately 310 species of animals, including 220 birds, 60 mammals, 20 fish, 7 amphibians, 1 reptile, and 3 domestic herbivores.

The 310 species of animals are widely distributed over approximately 1,222,000 acres of aquatic and terrestrial habitats. Nearly all the public lands within the resource area are used for livestock grazing by local ranchers who operate from private lands within the area. Currently, there are 145 ranch operation that use the public lands to graze approximately 30,000 cattle, 70 horses, and 200 sheep.

The Kremmling Resource Area is composed of 13 distinct habitat types (vegetation types) and numerous land forms that range in elevation from 6,700 feet to 10,700 feet above sea level. (See the Vegetation and Topography sections of this chapter

for a detailed discussion of the vegetation and topographic features.)

Source of Information and Inventory Methods

Population estimates for big game, sage grouse, and waterfowl were obtained from the Colorado Division of Wildlife. Additional data for this report was taken from the results of the inventory conducted in the resource area during the 1980 field season.

During this inventory, field crews also conducted a modified version of the Bureau's Integrated Habitat Inventory and Classification System (IHICS). The IHICS requires a listing of wildlife species occurrence by habitat site. Habitat sites are IHICS mapping units based on the dominant vegetation and land form of a given site. Wildlife species observed in the field during the inventory effort were listed by occurrence on range site area rather than by habitat site. A range site area is the basic land mapping unit for the inventory and is based on soils, dominant and co-dominant vegetation present and condition. Special habitat features, an integral part of the IHICS, were recorded during the inventory.

Other data used in this report was taken from an accumulation of general field inventory results compiled over the past several years and from numerous specific field studies. The more specific studies include the Middle Park Mule Deer Ecology Study, the Bald Eagle Winter Habitat Inventory, and the various facets of the extensive North Park Sage Grouse Study, to name a few.

Large Wild Mammals

Mule deer, pronghorn antelope, and Rocky Mountain elk are the most common large mammals found in the Kremmling Resource Area. Mule deer and elk occupy higher elevations, usually forested habitat, during summer and then migrate to lower elevation sagebrush dominant ridges and slopes to winter. BLM administered public lands provide the vast majority of winter range available to deer and elk in the resource area. The Colorado Division of Wildlife estimates the deer population to be 3,000 in North Park and 10,000 in Middle Park (including the lower Colorado River drainage); the elk population is estimated at 3,600 in North Park and 5,000 in Middle Park.

Breeding populations of pronghorn antelope are currently limited to North Park (including the Laramie River drainage). Antelope were historically residents of Middle Park but were extirpated by market hunters during the early 1900s. A few antelope appear in Middle Park each summer, probably immigrants from North Park, and the current population is estimated by the Division of Wildlife at 10. The North Park antelope population is estimated at 750. Antelope use the sagebrush dominant ridges and valleys within these ranges and usually occupy public lands in North Park on a yearlong basis.

Birds

Upland game birds common to the resource area include blue grouse and sage grouse. Blue grouse are widely distributed throughout the higher elevation woodlands and mountain meadows. Because blue grouse are extremely difficult to accurately census, population estimates are unavailable at this time. Sage grouse occupy the lower elevation sagebrush-dominant rangelands throughout the resource area. Sage grouse depend almost entirely on the sagebrush ecosystem for successful breeding, nesting, and winter survival. The North Park sage grouse population has been extensively studied for the past 10 years and the current population is estimated to be 20,000. Population estimates are unavailable for the remainder of the resource area.

The numerous streams, rivers, reservoirs, ponds, and associated riparian vegetation provide excellent habitat for a wide variety of waterfowl and shorebirds. Puddle ducks, including mallards, pintails, gadwalls, greenwinged teal and American widgeon, are common throughout the aquatic habitats in the resource area. North Park is particularly important because its waterfowl production is the second highest of any area in Colorado. Only the San Luis Valley produces more ducks annually than does North Park. Waterfowl production occurs throughout the resource area, but no other area approaches North Park in magnitude. The breeding season population of ducks in North Park is estimated at 17,000 to 20,000 breeding pairs. Population estimates for the remainder of the resource area are unavailable at this time.

Shorebirds are common in association with the numerous water bodies. Greater sandhill cranes, classified as a state endangered species, are known to nest in the southwest quadrat of North Park. Some public lands in this area have been identified by the Division of Wildlife as essential habitat for the greater sandhill cranes. Killdeers, American avocets, willets, and Wilson's phalaropes are among the more common shorebirds found in the resource area.

Raptors (birds of prey) are abundant. Prairie falcons, red-tailed hawks, marsh hawks, and golden

eagles are the more common raptors breeding and nesting in the area. Precipitous rock formations, large trees, and mountain meadows provide suitable nesting habitat for these species. The numerous songbirds and small mammal populations provide the prey base available to these raptors. Woodland nesting species such as goshawks, Coopers hawks, and sharp-shinned hawks are common in the forested areas.

Bald eagles and peregrine falcons, both classified as endangered species by the U.S. Fish and Wildlife Service, are known to occur. Bald eagles are fairly common winter residents along the Colorado River and several major tributaries in Middle Park. Migrant bald eagles are observed annually in North Park and occasionally in the Laramie River drainage. Peregrine falcons are observed in migration in Middle Park and North Park; however, no established use has been recorded, even though apparent suitable habitat exists. Essential or critical habitats for bald eagles and peregrine falcons have not been designated in the resource area.

Songbirds and Small Mammals

Songbirds and small mammals are abundant in the resource area. Little or no data other than occurrence exists for the majority of these species, even though they are important components of the various ecosystems. These species are important as food sources for larger birds and mammals and, equally important, may be used as environmental quality indicators.

Amphibians and Reptiles

A mere handful of amphibians and one reptile, the garter snake, occur in the resource area. The extreme cold temperatures and arid climate are not conducive to cold blooded animal survival. These species are apparently widespread in distribution but few in numbers.

Fish

The Kremmling Resource Area contains an important fishery resource in both streams and lakes. The fishery resource can be divided into two areas: streams and rivers that contain naturally reproducing populations of game fish, and lakes and reservoirs that contain some naturally reproducing populations which are supplemented with fish stocked by the Colorado Division of Wildlife (CDOW).

The predominant fish species in the small tributary streams in the resource area is the brook trout. The major game fish in the Colorado River is the rainbow trout. In addition to rainbows, some brown, brook, and cutthroat trout occur in lesser numbers. All of the fish have naturally reproducing populations in the Colorado River. CDOW stocks some cutthroat and rainbow trout in the Colorado River below Kremmling and near Hot Sulphur Springs. The rivers in the lower elevations of North Park are dominated by brown trout and contain some brook and rainbow trout.

Middle Park contains several large reservoirs that provide important recreational fisheries. Rainbow trout and Kokanee salmon are the two major fish species that occur in the reservoirs. Other game fish found in the reservoirs include lake, brown, cutthroat, and brook trout. Most of these game fish populations are maintained by CDOW stocking programs. Northern pike have been stocked in the Williams Fork Reservoir and are doing well. There are some indications that they have successfully reproduced in the reservoir.

Several lakes in North Park contain valuable fisheries. Lake John has a good population of brown, rainbow, and cutthroat trout. The Delaney Lakes contain excellent brown and rainbow trout populations. In addition to these reservoirs, there are several other lakes in North Park that contain stocked populations of rainbow trout.

There are no known populations of federally listed threatened or endangered fish in the Kremmling Resource Area. The Johnny darter is on the Colorado state list of threatened fish. Some small populations of Johnny darters may exist in the major North Park rivers. There may be populations of Johnny darters in Lake Granby and the Upper Colorado River as a result of "bait bucket" introductions.

Several species of roughfish also inhabit the reservoirs and streams in North and Middle Parks. Species such as creek chubs, fathead minnows, and Johnny darters that are not native to the Colorado drainage have been introduced there by bait fishermen releasing leftover live bait. This has been stopped now that the use of live minnows for bait is illegal above 7,000 feet in elevation. These roughfish serve as a food base for the larger predaceous trout and for northern pike.

Important Habitat Features

Critical winter ranges for elk, mule deer, and pronghorn antelope are essential to the survival of these species in the Kremmling Resource Area.

Critical winter ranges are located on sagebrush dominant ridges and south-facing slopes at lower elevations throughout the resource area. Habitats for species that depend on specific or historic sites for breeding and associated courtship activities are also critical. Sage grouse strutting grounds are a specific example of these important habitats. Strutting grounds are distributed throughout the sagebrush vegetation type, usually located on ridges with low-growing vegetation. Loss of nesting habitats that have been used historically and are limited in number and distribution for certain raptors, such as prairie falcons and golden eagles, may have serious negative impacts on these species. Detailed locations of these and other important habitat features are available in the Kremmling Resource Area Office.

Water is an essential habitat component for all animals, and, because of the arid climate of the resource area, it is limited in availability. Land use practices that could degrade the quality or reduce the quantity of water available would adversely impact all animals inhabiting the resource area.

VISUAL RESOURCES

The Kremmling Resource Area has a diverse landscape. It is dominated by two mountain parks, North and Middle Parks. These parks are broad depressions in the mountains where trees are absent or scattered across open, rolling terrain. Both ancient geologic activity and climatic conditions have alternately built up and weathered down the landscape, creating canyons, isolated peaks, rocky outcrops, rounded hillsides, flat valleys, and waterways. These diverse features, together with vegetation and surrounding mountains, combine to form the landscape of North and Middle Park (see Figure 2-1).

The majority of the public lands in the resource area provide the foreground and middleground landscapes to scenic mountain vistas. Developments on these lands have affected the vistas seen when driving through the area.

When traveling through North Park, the views seen are predominantly of open, rolling hills covered with grasses and sagebrush. Interest is created by the mountains surrounding the park. These, as well as the foothills bordering the park, create scenic vistas. The foothills are open sagebrush on the southern exposure and pine and aspen forest on the north exposure. The relief and vegetation adds variety along the park edges.

Throughout the center of the park, the sagebrush hillsides are broken up by water features and ridges. Creeks and rivers wind through the hills, displaying riparian vegetation communities as well as flowing water. Four lakes located in the northwest end of the park give this area additional variety and interest. The ridges that run across the park are composed of rock outcrops and open sage grasslands. The rock outcrops and higher relief break the line of the rolling, rounded hills.

Other features in North Park are the result of man's activities. A few small towns have developed in the park, the largest being Walden. The other towns in North Park are smaller and consist of a few buildings and a gas station. Some additional effects of man's activities are the oil and gas fields east of Walden, the coal strip mines east of Walden, the 345 kV powerlines cutting across the landscape, and the railroad line traversing the north end of the park. From the major traffic routes these activities can be seen but do not dominate the landscape. The visitor still can see the countryside, get a feeling of remoteness, and enjoy the mountain vistas.

Middle Park has more diversity in landscape features than North Park. When traveling through the area, one observes a landscape that is constantly changing. Here, too, open rolling sagebrush hills are seen but do not dominate all views. In the northwest, the rolling hills are interrupted by isolated mountain peaks that have rocky south faces and forested north faces.

The central part of the area is bisected by the Colorado River. The river winds through the park in an east/west direction and is alternately enclosed by cottonwood trees, open to riparian grasses, or dominated by dark, steep-walled canyons (Gore to the west and Byers to the east). As the river flows out of Gore Canyon, it winds through hills composed of reddish-orange, rocky soil strata. These hills are covered with pinyon-juniper and provide a diversity of color and texture along the riverway. The other canyon, Byers, is intersected by the main highway so many travelers see the steep, dark, vertical canyon walls.

East of Byers Canyon the countryside becomes even more diverse. The Colorado River, as it winds out of the canyon, cuts through a large, rocky ridge and several rocky hills. The river is enclosed by large cottonwood trees that add color and texture to the landscape. The highway has been built along the river, so views from the highway are dominated by forested waterways backdropped by rocky ridges. The very eastern edge is predominately a forested landscape.

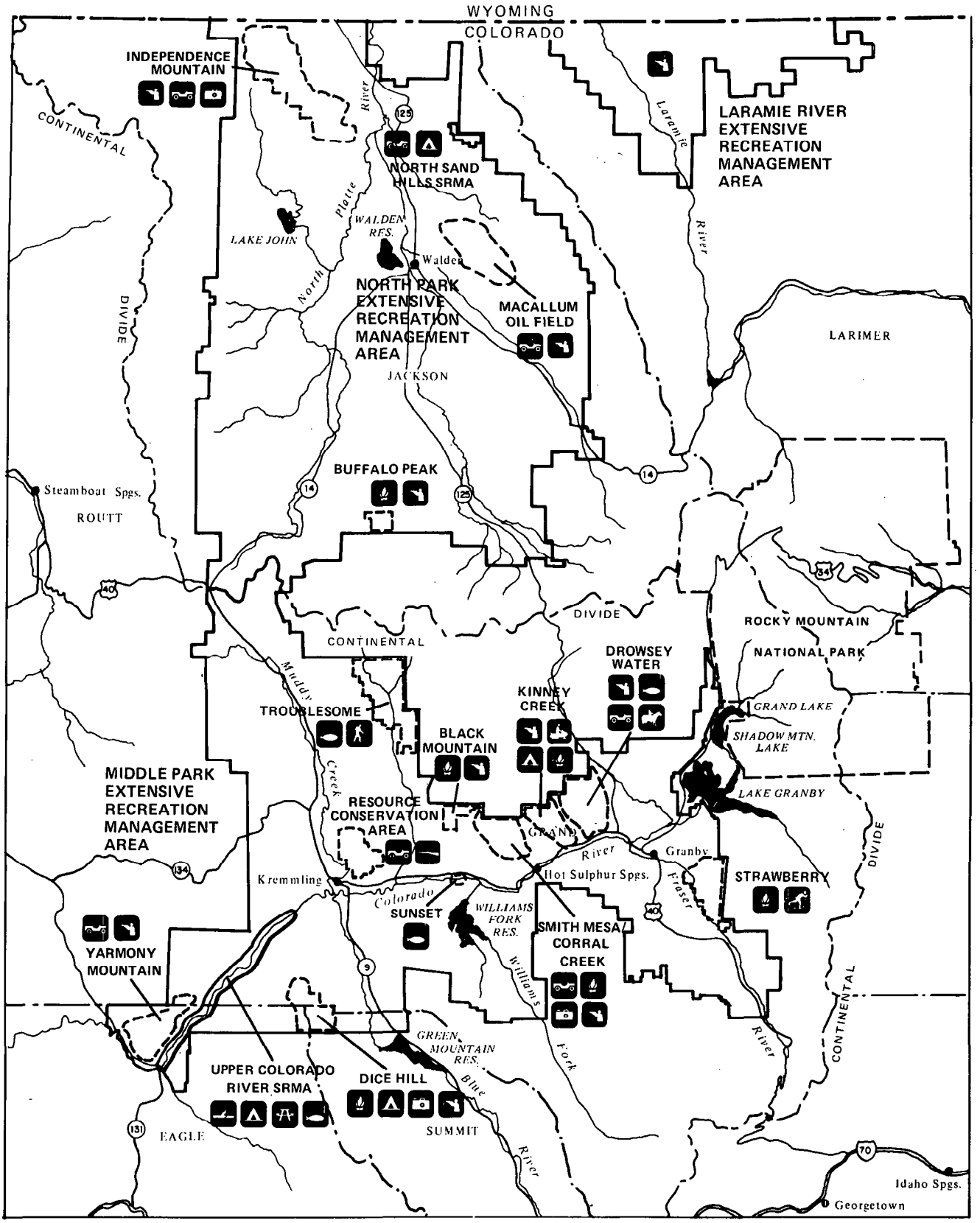


Figure 2-4 EXISTING RECREATION MANAGEMENT AREAS

——— Extensive Recreation Management Area Boundaries (ERMA)

– – – Primary Use Areas within the ERMA

——— Special Recreation Management Area Boundaries (SRMA)

SPECIAL ACTIVITY SYMBOLS

Floatboating	Off-Road Vehicles	Shooting for Pleasure	Cross-Country Skiing	Snowmobiling
Fishing	Hunting	Sightseeing	Firewood Gathering	
Camping	Hiking	Horseback Riding	Picnicking	

Figure 2 - 5. Walden, Colorado

Figure 2 - 6. Kremmling, Colorado

The man-made features in Middle Park are mainly the result of tourism. The largest towns are Granby on the east side and Kremmling on the west. Other, smaller communities have grown up along the eastern edge, including a ski town, dude ranches, and second home developments. Many houses have been built in the forested areas and serve mainly as recreational homes. The northeast edge also has recreational homes and facilities. This area is next to Grand Lake and Rocky Mountain National Park.

The diversity and landscape character of both North and Middle Park is an important resource because the landscape is seen by many people. Travelers passing between Cheyenne or Denver and northwest Colorado or Salt Lake must travel through the parks. Many vacationers also travel through the parks enroute to popular recreation areas. To most of these travelers the scenery or visual resource is an important part of their trip.

RECREATION

The boundaries of the Kremmling Resource Area contain an abundance of outdoor recreation opportunities. Major attractions include Rocky Mountain National Park, Arapaho National Recreation Area, several national forest wilderness areas, several major reservoirs, and the upper Colorado River. With the exception of the upper Colorado River and North Sand Hills, the major recreation features are located on lands managed by agencies other than BLM. Recreation on government administered lands within the resource area, regardless of agency administration, is becoming more important because these lands are close to the Denver metropolitan area and other front range communities. Virtually every type of outdoor recreation opportunity associated with the Rocky Mountains is available in the region.

The BLM managed lands, while not containing the major recreation attractions (except the upper Colorado River and North Sand Hills), do play a significant supplemental role in the regional recreation setting. In North Park, the BLM lands comprise a majority of the basin and are mostly rolling, open sage country useful for dispersed recreation. In Middle Park, the BLM lands are usually adjacent to national forest, except around Kremmling and along the Colorado River, and provide both access and "spill over" room for the more heavily used areas. In addition, BLM lands add another dimension to recreation opportunities available on other public lands by providing for opportunities in generally unrestricted settings for activities such as rockhounding, ORV use, and certain forms of wildlife viewing and hunting. Table 2-11 shows the increasing visitor use on the various types of public land in the region.

TABLE 2-11 -- REGIONAL RECREATION SETTING

RECREATION VISITOR USE[3]/VISITOR DAYS [1]

Area	1978	1979	1980
Arapaho National Recreation Area	282,012	277,600	336,800
Arapaho-Roosevelt National Forest[2]	669,100	915,800	1,168,700
Routt National Forest[2,4]	107,204	155,600	181,600
Colorado State Forest	86,892	77,079	68,494
Kremmling Resource Area (BLM) Upper Colorado River (Pumphouse to State Bridge)	23,100	27,114	29,623
Dispersed Use	43,173	47,970	53,300
TOTALS	1,211,481	1,501,168	1,838,517

SOURCE: U.S. Forest Service Visitor Use Data, Colorado Division of Parks and Outdoor Recreation.

[1]Visitor Day - The presence of one or more persons on an area of land or water for the purpose of engaging in one or more recreation activities during continuous, intermittent, or simultaneous periods of time aggregating twelve hours.

[2]Figures are for ranger districts or portions thereof included within the Kremmling Resource Area boundaries, excluding the Dillon Ranger District of the Arapaho National Forest.

[3]Includes use at developed sites and dispersed sites.

[4]Includes data for the Middle Park Ranger District of the Arapaho National Forest administered by the Routt National Forest.

[5]Visitation to Rocky Mountain National Park during the period 1978-1980 was: 3,037,866 visitors in 1978; 2,579,986 visitors in 1979; and 2,654,197 visitors in 1980. Visitors is not comparable to a visitor day.

In response to increasing use and demands for recreational opportunities on the public lands in the Kremmling Resource Area, BLM has started to intensively manage a few key areas. Areas are managed under one of two classifications: special and extensive.

Special recreation management areas (SRMAs), require intensive management to achieve recreation objectives and provide specific recreation opportunities. BLM recreation investments are concentrated in these areas. There are two de facto special recreation management areas in the resource area: the upper Colorado River and the North Sand Hills.

Extensive recreation management areas are areas where significant recreation opportunities and problems are limited and intensive recreation management is generally not required. Limited management actions (access, visitor information, signs, etc.) are usually adequate. The bulk of the public lands in the resource area are presently in this category. Figure 2-4 shows the location of recreation management areas as they presently exist. Table 2-12 displays the estimated visitor use.

TABLE 2-12 -- ESTIMATED VISITOR USE ON BLM ADMINISTERED PUBLIC LANDS

Recreation Management Area	County	1980 Estimated Visitor Days[2]	Approx. Acreage	Primary Recreation Activities	ROS[1,4] Classes (Settings)
Upper Colorado River SRMA[3] (pumphouse to State Bridge).	Grand/Eagle	29,623	4,870	Floatboating, Fishing, Camping, Picnicking.	RN
North Sand Hills SRMA[3]	Jackson	6,000	1,400	ORV, Camping	SPM
Middle Park ERMA[3]	Grand/Eagle	40,300	161,000	Dispersed use (see below)	See below
Use Areas [1]					
Sunset Fishing Access	Grand	1,300	120	Fishing	R
Troublesome	Grand	3,500	11,760	Hunting, Fishing, Hiking	SPN,SPM,RN
Resource Conservation	Grand	5,000	5,040	ORVs, Shooting for pleasure	RN,SPM
Black Mountain	Grand	2,000	1,960	Hunting, Firewood gathering	SPM
Kinney Creek	Grand	5,000	3,360	Hunting, Firewood gathering, Camping.	SPM,RN
Smith Mesa/Corral Creek	Grand	8,000	4,760	Hunting, ORVs, Firewood gathering, Sightseeing.	SPM,RN
Drowsy Water	Grand	3,000	8,860	Hunting, ORVs, Horseback riding, Jeep tours, Fishing.	SPM
Strawberry	Grand	3,000	6,020	Hunting, Firewood gathering, Cross country skiing.	SPM,RN
Dice Hill	Grand	8,000	5,200	Hunting, Camping, Sightseeing, Firewood gathering.	RN,SPM
Yarmony Mountain	Eagle	1,500	6,580	Hunting, ORVs	SPM,RN
North Park ERMA[3]	Jackson	7,000	193,661	Dispersed use (see below)	
Use Areas [1]					
Independence Mountain	Jackson	4,000	18,620	Hunting, ORVs, Historical observation.	RN,SPM
McCallum Oil Field	Jackson	1,500	7,720	ORVs, Hunting	RN
Buffalo Peak	Jackson	1,500	1,600	Hunting, Firewood gathering	RN,SPM
Laramie River ERMA[3]	Larimer		26,303	Hunting	SPM,RN
TOTAL		82,923			

[1]Areas that receive measurable use. The recreation use on the remainder of the public lands is too dispersed and minimal to estimate.

[2]LEstimates are based upon traffic counter information and personal observations of BLM personnel. For the upper Colorado River, actual use information is available. See Table 2-11 for definition of visitor day.

[3]SRMA=Special Recreation Management Area. ERMA=Extensive Recreation Management Area.

[4]Recreation Opportunity Spectrum Classes (see appendix for definitions). R=Rural; RN=Roaded Natural; SPM=Semi-primitive motorized; SPN=Semi-primitive nonmotorized; P=Primitive.

In order to identify recreation opportunities available on public lands and to properly plan for the long-term maintenance of these opportunities, BLM and the Forest Service have adopted a system called Recreation Opportunity Planning.

The premise of recreation opportunity planning is two-fold. One aspect is that people care not only about the recreation activities they can enjoy but also about the types of settings in which they occur. The other is that these settings help define a range or spectrum of recreation opportunities.

The reason settings are important is that they more precisely define the nature of recreation activities. Combined with the activities themselves, they affect people's recreation experiences. Both the types of activities and the settings in which they occur determine that type and amount of satisfaction people will derive from a recreation outing. For example, camping in a campground is totally different from backcountry camping. A greater sense of security and personal safety is provided in campgrounds. However, backcountry camping provides a greater opportunity for adventure and getting away from people.

For this RMP the different settings available on the public lands were identified. The variety of settings results from differences in physical resource character, the amount of social interaction between people within the area, and managerial controls imposed on both the resource and the people using it.

The Kremmling Resource Area has been mapped for both the activities and the settings in which they occur. Figure 2-4 shows some of the more dominant existing activity opportunities. Activity and setting opportunity information is also summarized on Table 2-12. The identification of these classes was coordinated with the U.S. Forest Service for adjoining national forests. Further information on the

process is available at the Kremmling Resource Area Office.

Settings relate directly both to the types of recreation opportunities available and to other resource management actions. Of the total public land acreage in the Kremmling Resource Area (388,839 acres), the following percentages occur in each of the six setting classes on the Recreation Opportunity Spectrum:

Primitive -- None
Semiprimitive Nonmotorized -- 1 percent
Semiprimitive Motorized -- 25 percent
Roaded Natural -- 73 percent
Rural -- 1 percent
Modern Urban -- None

These classes are defined in Appendix 8.

WILDERNESS

BLM Wilderness Review Process

In Section 603 of the Federal Land Policy and Management Act (FLPMA) of 1976, BLM was directed to review all wilderness areas of 5,000 acres or more for their wilderness potential. Those areas having wilderness characteristics as defined in the Wilderness Act of 1964 were to be studied to determine their suitability or nonsuitablility for preservation as wilderness. In order to determine which areas are suitable, BLM established a three-stage process, which was initiated in late 1978.

The first stage, inventory, was divided into two major steps: initial and intensive. The initial inventory, completed in 1979, identified three units in the Kremmling Resource Area that met the minimum size requirements, were roadless, and were, generally, natural in appearance. These units were Troublesome (CO-010-155), north of Kremmling; Drowsy Water (CO-010-168), northwest of Granby; and Yarmony Mountain (CO-010-178), north of State Bridge. The intensive inventory conducted during 1980 determined that only the Troublesome unit met all the criteria required for further wilderness consideration; this unit was identified as a wilderness study area (WSA). The summary of the intensive inventory evaluation on all three units and the analysis of public comment is contained in the BLM document, *Final Wilderness Areas*, November 1980.

The second stage, study, involves the process of determining which WSAs will be recommended as suitable for wilderness designation and which will be recommended as nonsuitable. These determinations, made through BLM's land use planning system, consider all values, resources, and uses of the public lands. The resource management plan represents this phase of the process. The planning criteria and quality standards on which these determinations are based are described in Appendix 6.

The third step, reporting, consists of actually forwarding these suitability recommendations through the Secretary of the Interior and the President to the Congress. Mineral surveys required by law, environmental statements, and other data are also submitted with these recommendations.

The information presented below is a summary of the information contained in the intensive inventory documentation. The supporting information is available for review in the Kremmling Resource Area Office and the Colorado State Office in Denver.

Size and General Status

Approximately 8,250 acres of contiguous public land are contained within the Troublesome WSA. A private inholding of 625 acres is located in the southern portion of the area. The access route to this private land is not included within the WSA. The Federal government owns the subsurface rights for all the public lands within the area as well as those for the private inholding. The Arapaho National Forest adjoins the area on the north and east, with a mixture of state and private lands on the south and west.

There are no known mining claims in the WSA.

Most of the WSA is leased for oil and gas. The leases were issued after passage of FLPMA. All pre-FLPMA leases have expired.

Two public water reserves, one 40 acres and the other 80 acres, are located in the unit. (A public water reserve is a withdrawal to protect water sources on public lands. The withdrawal segregates the area from mining location under the Mining Law of 1872 and from land disposal actions.) No easements or rights-of-way are within the WSA boundaries. The entire area is under grazing lease (two allotments).

Naturalness

The Troublesome WSA represents a rugged, mountainous terrain varying in elevation from 8,000 to 10,800 feet. The rock slide and rock outcropping areas contribute to this ruggedness. Most of the unit is forested with lodgepole pine, spruce, fir, and aspen. Vegetation variety is enhanced by the riparian habitat along the streams and the fungi-lichen ecotone on the rock outcroppings. The Troublesome and Rabbit Ears Creek drainages pass

through the area, forming a "V" in the northern portion. The headwaters of both streams are located in the Arapaho National Forest.

The area is substantially natural in appearance and has retained its ecological naturalness as well. No significant activities of man have occurred in the area to disrupt natural processes. Minor imprints of man include an irrigation ditch on the extreme lower end of Troublesome Creek, two small stock ponds, and a short drift fence made of natural materials. These range improvements are all small in scale, do not represent significant surface disturbances, and do not contrast to any great degree with the surrounding landscape.

Opportunities for Solitude

The Troublesome WSA has outstanding opportunities for solitude due to the following factors: sufficient size, topographic variation, and forest and riparian vegetation. The size of the unit provides ample opportunity for visitors to disperse themselves while in the unit. The drainages of Rabbit Ears and Troublesome Creeks, their side drainages, and intervening ridges would screen visitors from each other and provide opportunities to become isolated. These opportunities are enhanced by the dense forest and riparian vegetation. Visitors are also afforded long-range views from the higher points in the northern portion, thus enhancing a feeling of vastness. Overall, this unit provides numerous opportunities for solitude.

Activities taking place (e.g., operation of chainsaws and generators) on the private inholding would affect the opportunities for solitude on the lands immediately adjacent to the inholding; however, the vast majority of the unit is topographically screened from this area. Grazing is the primary current use. Because this activity is dispersed throughout the area, it does not significantly detract from the opportunities for solitude. In addition, grazing is an allowable use in designated wilderness areas. Ranching is the predominant use of the adjoining lands. The WSA is separated from these uses by ridges, which enhance, the geographic isolation of the area.

Opportunities for Primitive, Unconfined Recreation

Outstanding opportunities for primitive and unconfined recreation are present due to the following characteristics: (1) a variety of game and nongame wildlife, (2) opportunities for hiking, backpacking, horseback riding, cross-country skiing, and snowshoeing, (3) the availability of stream and riparian habitat for fishing and wildlife viewing, (4) a variety of geologic features for viewing and nontechnical climbing, and (5) opportunities for scenic viewing. Recreation use would tend to be concentrated in the Troublesome and Rabbit Ears Creeks drainages. The private inholding would impede travel along Troublesome Creek in the southern portion of the unit and would tend to further concentrate use in the northern portion of the unit. It is possible to avoid the private property by traveling along the western boundary. Visitors entering the area from the north, west, or east could travel unimpeded by the inholding.

Special Features

The area is within a three- to five-hour drive (depending on location of access) of the Denver metropolitan area. U.S. Highway 40, which passes within nine miles of the unit, serves as a major tourist route for northern Colorado. The visual resource inventory has identified the area as having class "A" scenery due to the forest vegetation, topographic variety, and lack of any significant man-made improvements on the landscape. No unique or significant ecological, geological, or other features of scientific, educational, scenic, or historic values have been identified.

Regional Setting

There are several existing and proposed wilderness areas in the region as well as several wilderness study areas (See Table 2-13).

TABLE 2-13 -- REGIONAL SETTING -- WILDERNESS

DESIGNATED NATIONAL FOREST WILDERNESS AREAS[1]

Wilderness Area	National Forest	County	Ecosystem[2]	Acreage
Mt. Zirkel	Routt	Routt/ Jackson.	Western Spruce Fir Forest/ Alpine, Meadow and Barren.	140,972
Rawah	Roosevelt	Larimer	[3]	76,394
Never Summer.	Arapaho/ Routt.	Grand/ Jackson.	[3]	14,100
Indian Peaks	Arapaho/ Roosevelt.	Grand/ Boulder.	[3]	70,000
Cache La Poudre.	Roosevelt	Larimer	Western Spruce Fir Forest/Pine Douglas Fir Forest.	9,400
Comanche Peak.	Roosevelt	Larimer	[3]	67,500
Neota	Roosevelt	Larimer	[3]	9,900
Eagles Nest	Arapaho/ White River.	Summit/Eagle	[3]	133,915

TABLE 2-13 -- REGIONAL SETTING -- WILDERNESS—Continued

Wilderness Area	National Forest	County	Ecosystem[2]	Acreage
DESIGNATED NATIONAL FOREST WILDERNESS AREAS[1]				
Flat Tops	White River/ Routt.	Rio Blanco/ Garfield/ Eagle.	Western Spruce Fir Forest.	235,230
			TOTAL	737,411
NATIONAL FOREST WILDERNESS STUDY AREAS				
Vasquez Peak	Arapaho	Grand	[3]	12,800
NATIONAL FOREST FURTHER PLANNING AREAS				
Service Creek	Routt	Routt	Western Spruce Fir Forest.	39,860
Williams Fork	Arapaho	Grand/ Summit.	[3]	74,770
			TOTAL	114,630
PROPOSED NATIONAL PARK WILDERNESS AREA				
Rocky Mountain National Park.		Larimer/ Boulder/ Grand.	Pine Douglas Fir Forest/ Western Spruce Fir Forest/ Alpine Meadows and Barren.	239,835
BLM WILDERNESS STUDY AREAS				
Castle Peak		Eagle	Sagebrush Steepe.	11,940
Bull Gulch		Eagle	Sagebrush Steepe.	15,000
Hack Lake		Eagle/ Garfield.	Western Spruce Fir Forest.	3,360
			TOTAL	20,300

[1]As of December 1980.
[2]Bailey - Kuchler Ecosystems of the U.S. All areas are in Rocky Mtn. Forest province.
[3]Same as Mt. Zirkel.

The Forest Service Roadless Area Review and Evaluation II (RARE II) identified a 98,890 acre roadless area for the national forest lands adjacent to the Troublesome WSA. The RARE II process was completed prior to the identification of potential WSAs by BLM. The RARE II roadless area, Arapaho Creek (Area No. 109), was not recommended for wilderness due primarily to mineral values (oil and gas) and the potential for timber development. The area has been allocated to nonwilderness uses. Further information on the RARE II evaluation is available from the Routt National Forest Supervisor's Office in Steamboat Springs.

The Forest Service is presently preparing a management plan for the Routt National Forest which administratively includes that portion of the Arapaho National Forest adjacent to the Troublesome WSA. The forest plan is scheduled for completion in late 1982 and will consider nonwilderness uses for the national forest lands adjacent to the BLM WSA. The wilderness potential of these national forest lands cannot be reconsidered until the next generation of land management plans.

All the areas listed on Table 2-13 are within a five-hour drive of the Denver metropolitan area. In addition, there are several existing wilderness areas (e.g., Hunter-Fryingpan, Mt. Evans, Maroon Bells, Collegiate Peaks) south of the region shown in Table 2-13, but within a day's driving time (five hours) of Front Range communities.

Existing Rights and Off-Site Impacts

With the exception of potential mineral development under the 1872 Mining Law or oil and gas leases issued prior to October 21, 1976, there are no existing rights or special uses in the WSA that would impair BLM's ability to manage the WSA in perpetuity. The BLM minerals inventory, which included consultation with industry, did not identify any significant potential for mineral development (including oil and gas) in the areas.

Two livestock grazing allotments fall within the boundaries of the WSA. The two allotments combined have a preference demand of 730 AUMs of livestock forage, with a designated grazing season of July 1 to October 15. Existing management facilities include two stock watering reservoirs and approximately one-half mile of allotment boundary fence. Existing livestock grazing and supporting facilities continue to be maintained in this area.

Nonwilderness uses on adjoining lands, especially the national forest lands upstream from the WSA, could impact the wilderness values that presently exist in the WSA. However, these nonwilderness uses are subject to environmental laws, such as the Clean Water and Clean Air Acts, which would mitigate any degradation of downstream wilderness values should the area be designated wilderness.

Ecosystem Representation

As shown on Table 2-13, all existing and potential wilderness areas in the region, including the Troublesome WSA, are in the Rocky Mountain Forest Province (Ecoregions of the U.S., R.G. Bailey, Forest Service 1976). In terms of the potential natural vegetation (PNV), the areas in the region are a mixture of western spruce-fir forest and alpine meadows and barren (PNV, A.W. Kuchler, University of Kansas 1966). The Troublesome WSA is located entirely within the western lodgepole pine, spruce-fir forest zone.

TABLE 2-14 -- Kremmling Resource Area Chronology[1]

A. Paleo-Indian[2]
1. Llano ..... 10,000 - 9,000 B.C.
   (No documented sites in KRA) .....
2. Folsum ..... 9,000 - 7,000 B.C.
   (No documented sites; reports of several unsubstantial finds in KRA)
3. Plano ..... ca 7,000 - 5,000 B.C.
   (Earliest documented evidence of human occupation in KRA)

C. Plains Archaic
1. Early ..... ca 5,000 - 3,000 B.C.
2. Middle ..... 3,000 - 1,000 B.C.
3. Late ..... 1,000 B.C. - A.D. 500

C Late Prehistoric ..... ca. A.D. 500-1800 [2]

D. Protohistoric
1. Indian-European Contact .... ca. A.D. 1820
2. Ute Indian Removal ..... A.D. 1881

E. Historic ..... ca. A.D. 1820 -

[2](Frison 1978)

CULTURAL RESOURCES

Prehistoric

The earliest signs of people in the Kremmling Resource Area date from about 10,000 years ago. Although occupation of the area in prehistoric times probably occurred only in the summer, this seasonal use has been continuous since people first began to populate central North America. This great span of time has been divided into five periods: Paleo-Indian, Plains Archaic, Late Prehistoric, Protohistoric, and Historic (see Table 2-14).

Although Kremmling is in an area that anthropologists call the Northwest Plains, the ancient and protohistoric people came from three different cultural traditions: Great Basin, Plateau, and Plains. From whatever cultural tradition or time period they came, their use of the area was much the same. Seasonal hunting and gathering by small nomadic bands was the persistent, basic way of life until European culture overwhelmed the area.

The ancient climate was at first cold and harsh, then much warmer than it is today. After some years the climate became harsh again, then warm, gradually evolving into our modern climate of long cold winters, short wet springs, and even shorter summer growing seasons. The prehistoric people adapted to this environment by staying away from the area in the winter and entering it in small groups during the summer. These bands followed seasonal animal migrations into rich grazing lands during the warmer periods when other plant foods were also most abundant. The fleeting nature of game and useful plants called for small, close-knit bands of people to give mobility, organization, and security.

The physical remains of these ancient peoples make up cultural resource sites (Table 2-15). Tool making sites, campsites, quarrys, and kill sites are the most common.

TABLE 2-15 -- Cultural Resources Site Types

Site Types	Characteristics	Cultural Complex
Lithic scatter (also open lithic scatter, chippings, chipping station)	Area containing waste products and/or tools associated with stone tool manufacture	All (Paleo-Indian, Archaic, Prehistoric, and Protohistoric)
Campsite (habitation, open camp, camp, burnt spots, fire spots, hearths)	Area containing substantial features indicating more extensive and/or long useage. Includes lithic scatters and/or evidences of fires (charcoal, fire-cracked rocks or artifacts, burnt bone), and/or evidence of plant resource use (grinding tools, ground stone).	All
Quarry (chippings, tool stone site, manufacturing/procurement area)	Area containing a natural source of rocks for tool manufacture. Unmodified rock, waste, and tools in various stages of manufacture are present.	All
Kill Site (trap, drive, jump)	An area containing the remains of one or more animals, in association with stone and/or bone tools.	All, but particularly Llano and Plano of Paleo-Indian.
Burial (burial platform, burial tree, burial ground)	Area containing the remains of human beings	Protohistoric
Stone circle (stone ring, tipi ring, tipi)	Circular, spaced arrangement of rocks, with varying diameters	Protohistoric
Wickiup (tipi, tipi poles)	Arrangement of poles or branches of pinyon, juniper, or other trees or brush against a living tree or piled upon each other.	Protohistoric
Rock alignment (rock/stone walls, fort, fortification)	Rock alignments or walls of varying height or construction, usually of dry-laid stone masonry.	Protohistoric

TABLE 2-15 -- Cultural Resources Site Types—Continued

Site Types	Characteristics	Cultural Complex
Trail (path, pass)	Routes used by early peoples. Physical evidence may or may not be present.	All. Most evident for Archaic through Protohistoric.
Rock Shelter (petrograph)* 1) pictograph 2) petroglyph	Area protected by overhanging or enclosed rock formation, usually with dripline, that has been used by pre-/proto-historic peoples. Sometimes rock alignments with dry or wet masonry is present.	Plano, Archaic. Possibly Prehistoric, Protohistoric
Granary (cist, corn crib)*	Mud-mortared sandstone slab structures (about 1.5 x 1.5 x 1.5m). Often built into sandstone ledges. Sometimes mud-lined and capped by stone slabs. Used for food storage.	Archaic
Rock alignment* (walls, fortifications)	Rock alignment or wall of wet-laid masonry consruction (use of mortar or mud).	Archaic, Protohistoric?
Trails	Identified Routes followed by early explorers or by many emigrants. Physical evidence may or may not be present.	Historic
Forts	Military establishments for the protection of persons or property. Also gathering and exchange points prior to the establishment of towns.	Historic
Toll and/or wagon roads	Roadbed, bridges, and stations associated with early commercial or private transportation of goods or people.	Historic
Stage stations	Wayfarers' resting places and fresh harness animal transfer points.	Historic
Hotel	Building in which wayfarers or vacationers were (are) temporarily housed. Transients' temporary quarters for which rent is paid.	Historic
Resort	Structure or group of structures whose primary function is recreation.	Historic
Bridge	Structure used by a road or railroad to cross a watercourse, depression, or obstacle.	Historic
Homestead	One or more structures of varied size, shape, and materials used to shelter isolated Euro-American families claiming land under various homestead laws.	Historic
Ranch	Cluster of structures of single and multiple uses associated with a livestock-based family economic operation.	Historic
Railroad	Roadbed, tracks, trestles, bridges, depots, and rolling stock associated with early (and continued) industrial transportation of goods and people.	Historic
Town	Aggregation of structures sheltering domestic, business, educational, social, political, and religious activities. Individual structures may be single or multiple use, but population is multifamily.	Historic
Unique Structure	Any structure whose merit is associated with a particular person or event.	Historic
Site	The location where a historic event occurred but no tangible evidence remains of the action itself.	Historic
Architectural site	A structure whose merit is its manner or style of construction.	Historic
School	A structure built for educational purposes, but whose historical function is as a community center in the absence of nearby towns.	Historic
Mine	An outcropping of valuble mineral resource and the structures or residue associated with the removal activity.	Historic
Mill	Structure(s) associated with mineral refining activity.	Historic
Reclamation projects	Structures associated with irrigation, water, and soil retention, or flood control. Usually, these are engineering features.	Historic.

*CR sites not presently documented in KRA. Location of these types would constitute major scientific finds.

Paleo-Indian

The earliest people known on the Northwestern Plains were the Paleo-Indians, who date from before 6,000 B.C. Their time is divided into three cultural stages: Llano, Folsom, and Plano.

The Paleo-Indians hunted mammoths and extinct species of bison. Grinding stones found in nearby Wyoming are evidence that they ate seeds and grain.

They were hunter-gatherers whose campsites indicate short periods of occupation by only a few individuals. Site locations are usually in park floor basins of the area. There are no documented sites of the Llano or Folsom, but Folsom points have been reported in both North and Middle Parks.

The Plano people used a wide variety of stone spear points. Several documented sites have been found in the area.

Plains Archaic

The Plains Archaic period (6000 B.C. - A.D. 500) is divided into the Early, Middle, and Late stages which were characterized by a change to smaller weapons for hunting modern animals such as the modern bison, and a greater dependence on plant resources. Barricades and traps were built to drive game into killing areas, implying a more complex social organization and larger groups. Campsites have been found in the mountains, intermontane basins, foothills, and plains. The Early Plains Archaic is best represented in the Indian Peaks region near Rocky Mountain National Park.

The Middle Plains Archaic in the Northwestern Plains is delineated by the McKean Complex, with distinct spear and lance points. Stone circle sites made their first appearance in the Middle and Late stages, with a wide variation in size and location. Their functions are largely a matter of conjecture, as most stone circles lack other cultural material. Most of the stone circle sites here indicate use as anchors for lodge coverings, though some are too small for use as living areas. Possible functions could include ceremonial uses, but this has not been substantiated locally.

The Late Plains Archaic is primarily characterized by the appearance of corner-notched projectile points, also evident here.

Late Prehistoric

The last prehistoric period in this area is the Late Prehistoric (A.D. 500-1800), which was characterized by the use of the bow and arrow for both large and smaller game. Bison hunting continued, with impoundments as well as jumps and traps being used. Pottery has been documented in the area.

Protohistoric

The Protohistoric Period (ca. A.D. 1820 - 1880) consists of historically known native peoples. The Utes, Arapaho, Cheyenne, Shoshone, Crow, Sioux, and Blackfoot were known in the area, although the Utes were the principal occupants.

The Utes had lived a Western Archaic lifestyle in the Great Basin to the west. They gathered in larger groups for game drives and traveled to the mountains during the summers and south to the plateaus in the fall, living in small brush lodges and wickiups. The introduction of the horse around 1640 A.D. greatly altered their social organization, settlement, and subsistence patterns.

Group size became larger, with their range of movement and dependence on plant resources increasing. Contact with the Plains tribes led to use of tipis and other Plains customs. Firearms, trade-beads, and metal arrow heads were also acquired at this time.

During their movement through the Parks and on the Plains, the Utes encountered Euro-Americans in the early 1800's. Early contacts between Utes and these trappers resulted in mutual indifference (Lischka et al. 1979; Burney et al. 1978).

Historic

The early history of Middle and North Parks is one of exploitation by fur trappers from the 1820's through the 1830's who left no known physical remains. Similarly, explorers like John C. Fremont in 1844 and Ferdinand V. Hayden in 1876 left no physical traces, but they did assemble valuable journals describing their findings.

Hot Sulphur Springs became the first permanent European settlement in 1860. The springs and town still remain. To get settlers and miners into the area, roads were built over Rollins Pass and Berthoud Pass. The original wagon roads can still be seen. Mining in North Park first occurred in 1870 with the Independence Mountain gold placers. In 1875 a small boom occurred at Lulu City, Gaskill, and Grand Lake. The ruins of Lulu City and Gaskill are presently in Rocky Mountain National Park, while Grand Lake is currently a tourist town.

The Ute Indians used the parks for hunting grounds. There were minor incidents, such as a "battle" at Independence Mountain in the early 1870s. In 1881, as a result of the Meeker massacre

of 1879, the Utes were removed to Utah and the parks were opened to settlers for homesteading.

North and Middle Parks were settled by farmers and ranchers during the 1870s and 1880s. Middle Park's agriculture was confined to the river bottoms, while North Park's hay and horses became world famous. Ranching is still very important in North and Middle Park. Many of the original settler's operations are still run by the descendents of the pioneer families.

North and Middle Parks were not fully developed due to an inadequate transportation system. In 1904, the Denver, Northwestern, and Pacific Railroad (the Moffat Road) reached Middle Park. This is the present Denver and Rio Grande Western's line to Craig and Glenwood Springs. The original Rollins Pass route of the Moffat Road is in the National Register of Historic Places. It was replaced in 1928 when the Moffat Tunnel was completed. North Park also got a railroad in 1912 when the Laramie, Hahn's Peak, and Pacific was completed to Coalmont, giving access to North Park's small coal export industry. This railroad is the present-day Union Pacific line from Laramie to Walden. The Coalmont section has been abandoned.

One of the by-products of the railroads was a timber industry. By the early 1900's, eastern Middle Park was heavily dependent upon the timber business. Mills were erected at towns such as Monarch (now under Lake Granby). Many mills still operate in the park.

The 1920s saw a slow but stable economy in North and Middle Parks. The newly completed Fall River Road through Rocky Mountain National Park brought an influx of tourists to Grand Lake. This period is represented by National Register sites such as the Kauffman House in Grand Lake and the Hozwarth Historic District.

The other major event during the 1920s and 1930s in the area was the continuation of major transmountain water diversion projects made possible by increases in Federal government's public works funds.

Physical remains of these projects can be seen in ditches, tunnels, and reservoirs. Green Mountain, Shadow Mountain, Williams Fork, and Lake Granby are all part of these diversion efforts.

From 1940 to the present, Middle Park has seen steady growth, particularly on the eastern side. The development of Winter Park as a ski resort in 1939 helped greatly. The western side tended to languish until the late 1960s, when AMAX built its Henderson Mill near Ute Pass. This caused an influx of workers to Kremmling, Hot Sulphur Springs, and Granby. North Park experienced an oil boom in the 1920s which has continued to the present. Coal mining collapsed in the 1940s, but ranching continues to be the park's mainstay. Population increases have been minimal in North Park, but substantial in Middle Park since 1960 (see Table 2-16).

ECONOMICS

Resource Area Definition

Because much social and economic data is not available for geographic units smaller than a county, it is necessary to define the resource area in terms of whole counties. Therefore, the Kremmling Resource Area, for social and economic analysis, consists of Grand and Jackson Counties. Where BLM-controlled resources are located outside of those two counties -- in adjacent portions of Eagle, Larimer, and Summit Counties -- the resources are included in the analysis, but their use is treated as affecting only the two-county area.

Grand County is divided by the Bureau of the Census into the Granby and Kremmling Divisions, which correspond to the areas termed eastern and western Grand County in the text. Jackson County is treated as a single unit.

Current Economic and Social Characterics

Tourism, mineral production and processing, timber, and agriculture compose the resource area's economic base. Other types of local economic activity serve to support these export-oriented industries (export meaning that most of their product is sold to customers outside the resource area) and the local population. Estimates of 1979 exports by industry are given in Table 2-17.

BLM's actions can affect all four export sectors, but its major effects are on agriculture and timber. Its involvement in the growth sectors is currently small. Therefore, barring major changes in policy or significant resource discoveries, the impacts of its actions are likely to be minor.

Population

The resource area has experienced a rapid rate of population growth since 1970, in contrast to a relatively slow increase during the previous decade (Table 2-16). The rate at which people have moved

TABLE 2-16 -- Population

	1960	1970	1980	Percent Change 1960-70	Percent Change 1970-80
Grand County	3557	4107	7475	15	82
Granby Division	2340	2902	5325	24	83
Fraser-Winter Park	N/A	509	950	N/A	87
Granby	503	554	963	10	74
Grand Lake	170	189	382	11	102
Hot Sulphur Springs	237	220	405	- 7	84
Outside communities	N/A	1430	2625	N/A	84
Kremmling Division	1217	1205	2150	- 1	78
Kremmling	576	764	1296	33	70
Outside community	641	441	854	- 31	94
Jackson County	1758	1811	1863	3	3
Walden	809	907	947	12	4
Outside community	949	904	916	- 5	1
Total resource area	5315	5918	9338	11	58
State of Colorado	1753925	2207259	2888834	26	31
United States	179323175	203212926	226504825	13	11

N/A: Not available. Winter Park population was not tabulated separately in 1960.
Source: Bureau of the Census, various years. *Census of the Population,* Department of Commerce, Washington, D.C.

TABLE 2-17 -- Exports[1] from the Resource Area by Industry in 1979

(thousand dollars)

Agriculture	$7,487
Mining	263,631
Manufacturing, including lumber	5,555
Tourism [2]	28,619
Other	772
Total	306,064

[1] Exports means sales to any place outside the resource area.
[2] Tourism includes retail trade and services other than medical.
Source: BLM estimates.

into the resource area from 1970 to 1980 has been almost double that at which they have moved into the state. However, as might be expected, most of the growth has occurred in Grand County, particularly on the eastern side of the county.

Economic developments readily explain the way population is distributed. Almost 90 percent of the growth since 1970 has occurred in two areas -- the strip from Winter Park to Granby and the Kremmling Division (western Grand County). In the latter case, the bulk of the growth has concentrated in or adjacent to the town of Kremmling. Northern and south-central Grand County and the whole of Jackson County, in contrast, have gained relatively few people.

Recreation, including recreation homes, accounts for the largest part of the increase, which is in the eastern Grand County strip. Population growth in the Kremmling area has been stimulated mostly by the Henderson Mill. Other recent developments, such as coal mining near Walden, have brought in far fewer new residents. The traditional elements of the economy -- ranching and the timber industry -- have had little effect, or a negative one, on population levels and distribution.

Employment and Income

In the last few years, substantial growth has occurred in the total labor force and in employment in the resource area (Table 2-18). However, almost all of the growth has taken place in Grand County, while Jackson County has shown a net decline. From 1975 to 1979 the resource area's rate of increase has trailed that of the state as a whole, largely because of rapid development in the Front Range area.

The unemployment rate has declined in the resource area and remains well below that of the state. Again, however, the entire decline has occurred in Grand County.

Employment figures for the individual industry groups illustrate recent trends in the area's econo-

TABLE 2-18 -- Labor Force, Employment and Unemployment Rate

	1975	1976	1977	1978	979	Average Annual Percent Growth
Labor Force						
Grand County	4026	4546	4353	4591	5036	6.0
Jackson County	898	758	800	843	848	−1.0
Resource area	4924	5304	5153	5434	5884	4.7
State of Colorado	1,162,083	1,199,454	1,258,262	1,337,481	1,412,070	5.0
Total Employment						
Grand County	3887	4382	4217	4505	4940	6.4
Jackson County	865	729	766	814	816	-1.0
Resource area	4752	5111	4983	5319	5756	5.0
State of Colorado	1,101,096	1,140,485	1,199,718	1,288,005	1,366,666	5.6
Unemployment rate						
Grand County	3.5	3.6	3.1	1.9	1.9	--
Jackson County	3.7	3.8	4.2	3.4	3.8	--
Resource area	3.5	3.6	3.3	2.1	2.2	--
State of Colorado	5.2	4.9	4.7	3.7	3.2	--

Source: Colorado Division of Employment and Training, Labor Market Information Branch, various issues. Colorado Manpower Review. Denver, Colo. Colorado Division of Employment and Training.

my and explain the discrepancy in growth between the two counties (Table 2-19). Personal income figures have shown nearly the same trends as employment (Table 2-20). The principal exceptions are agricultural income, which fluctuates markedly from year to year, and earnings in manufacturing, which are believed to have increased because of higher rates of pay at the Henderson Mill despite a drop in employment.

TABLE 2-19-- Employment by Sector

	Wage and Salary Employment					Percent of Total				
	1975	1976	1977	1978	1979	1975	1976	1977	1978	1979
Grand County										
Agriculture	$90	$86	$94	$101	$W	3.5	2.9	3.4	3.4	N/A
Mining	17	12	30	14	W	0.6	0.4	1.1	0.5	N/A
Construction	615	618	208	188	290	24.0	20.9	7.5	6.3	8.8
Manufacturing	45	138	154	159	176	1.8	4.7	5.5	5.3	5.3
Transportation, communication, utilities	104	98	97	107	102	4.0	3.3	3.5	3.6	3.1
Trade	442	502	567	684	782	17.2	17.0	20.4	22.7	23.7
Finance, insurance, real estate	105	98	124	153	180	4.1	3.3	4.5	5.1	5.4
Services[1]	607	824	939	1030	1107	23.6	27.9	33.8	34.3	33.5
Government	542	579	569	571	578	21.1	19.6	20.5	19.0	17.5
Total	2,567	2,955	2,782	3,007	3,305	100.0	100.0	100.0	100.0	100.0
Jackson County										
Agriculture	139	137	W	159	135	20.2	23.4	N/A	23.3	20.3
Mining	39	44	68	94	125	5.7	7.5	10.7	13.8	18.8
Construction	10	10	W	18	W	1.4	1.7	N/A	2.6	N/A
Manufacturing	207	116	W	W	110	30.1	19.8	N/A	N/A	16.5
Transportation, communication, utilities	29	27	30	28	25	4.2	4.6	4.7	4.1	3.8
Trade	75	76	106[2]	W	W	10.9	13.0	16.7	N/A	N/A
Finance, insurance, real estate	15	14	17	18	18	2.2	2.4	2.7	2.6	2.7
Services[1]	39	28	23	W	17	5.7	4.8	3.6	N/A	2.6
Government	135	133	127	134	143	19.6	22.7	20.0	19.8	21.3

TABLE 2-19-- Employment by Sector—Continued

	Wage and Salary Employment					Percent of Total				
	1975	1976	1977	1978	1979	1975	1976	1977	1978	1979
Total	688	585	636	682	666	100.0	100.0	100.0	100.0	100.0
Total Resource Area										
Agriculture	229	223	W	260	W	7.0	6.3	N/A	6.8	N/A
Mining	56	56	98	108	W	1.7	1.6	2.8	2.9	N/A
Construction	625	628	W	206	W	19.2	17.7	N/A	5.5	N/A
Manufacturing	252	254	W	W	286	7.7	7.2	N/A	N/A	7.2
Transportation, Communication, Utilities	133	125	127	135	127	4.1	3.5	3.7	3.6	3.2
Trade	517	578	673	W	W	15.9	16.3	19.2	N/A	N/A
Finance, Insurance, real estate	120	112	141	171	198	3.7	3.2	4.1	4.6	5.0
Services[1]	646	852	962	W	1,124	19.8	24.1	27.7	N/A	28.3
Government	677	712	696	705	720	20.8	20.1	21.6	20.5	18.1
Total	3,255	3,540	3,418	3,689	3,971	100.0	100.0	100.0	100.0	100.0
State of Colorado										
Agriculture	21,382	21,363	23,775	25,004	22,119	2.0	1.9	2.1	2.0	1.7
Mining	19,424	20,756	23,734	27,349	30,616	1.8	1.9	2.1	2.2	2.4
Construction	53,246	55,153	61,735	72,518	79,289	5.0	5.0	5.3	5.9	6.1
Manufacturing	136,031	142,396	152,551	167,397	181,184	12.9	13.0	13.2	13.6	13.9
Transportation, communication, utilities	59,345	60,035	62,573	68,841	74,437	5.6	5.5	5.4	5.6	5.7
Trade	236,362	252,485	265,595	281,098	299,047	22.4	23.0	23.0	22.8	23.0
Finance, Insurance, Real Estate	56,992	59,102	63,021	69,846	76,131	5.4	5.4	5.5	5.7	5.8
Services	198,998	207,753	221,953	240,481	255,406	18.8	18.9	19.2	19.5	19.6
Government	273,838	279,729	279,828	281,191	284,423	25.9	25.4	24.2	22.8	21.8
Total	1,055,618	1,098,772	1,154,765	1,233,725	1,302,652	100.0	100.0	100.0	100.0	100.0

Note: Percent of total detail may not add to 100 percent because of rounding.
[1]Includes unclassified.
[2]Retail trade only.
W: Withheld to avoid disclosing confidential information.
N/A: Not Available.
Source: Bureau of Economic Analysis, various years. Regional Economic Information System. U.S. Department of Commerce, Washington, D.C.

TABLE 2-20 -- Income by Sector

(Thousand Dollars)

	Personal Income					Percent of Total				
	1975	1976	1977	1978	1979	1975	1976	1977	1978	1979
Grand County										
Agriculture	$166	−$328	$292	$1,351	$W	0.6	− 0.9	1.0	3.9	N/A
Mining	619	267	522	332	W	2.1	0.8	1.7	0.9	N/A
Construction	11,700	13,109	3,568	2,771	5,169	39.5	37.2	11.8	7.9	11.5
Manufacturing	654	1,811	2,023	2,416	2,826	2.2	5.1	6.7	6.9	6.3
Transportation, Communication, Utilities	1,876	2,016	2,277	2,577	2,904	6.3	5.7	7.6	7.4	6.5
Trade	4,169	4,592	5,091	6,191	7,589	14.1	13.0	16.9	17.7	16.9
Finance, Insurance, Real Estate	781	1,156	2,084	2,672	3,097	2.6	3.3	6.9	7.6	6.9
Services	4,885	7,088	8,506	10,449	11,633	16.5	20.1	28.2	29.9	25.9
Government	4,751	5,505	5,786	6,233	6,707	16.0	15.6	19.2	17.8	14.9
Total	29,601	35,216	30,149	34,992	44,893	100.0	100.0	100.0	100.0	100.0
Jackson County										
Agriculture	−1,056	868	W	4,140	−2,284	21.3	12.6	N/A	33.4	−31.2
Mining	1,080	1,673	1,821	2,842	3,836	21.8	24.3	25.3	22.9	52.3
Construction	219	268	249	451	242	4.4	3.9	3.5	3.6	3.3
Manufacturing	2,176	1,385	W	W	1,685	44.0	20.1	N/A	N/A	23.0
Transportation, Communication, Utilities	321	358	474	471	521	6.5	5.2	6.6	3.8	7.1
Trade	686	729	914	950	1,046	13.9	10.6	12.7	7.7	14.3

TABLE 2-20 -- Income by Sector—Continued

(Thousand Dollars)

	Personal Income					Percent of Total				
	1975	1976	1977	1978	1979	1975	1976	1977	1978	1979
Finance, Insurance, Real Estate	180	190	198	221	252	3.6	2.8	2.7	1.8	3.4
Services	301	260	331	W	357	6.1	3.8	4.6	N/A	4.9
Government	1,042	1,161	1,243	1,449	1,675	21.0	16.8	17.3	11.7	22.9
Total	4,949	6,892	7,202	12,387	7,330	100.0	100.0	100.0	100.0	100.0
Total Resource Area										
Agriculture	−890	540	W	5,491	W	−2.6	1.3	N/A	11.6	N/A
Mining	1,699	1,940	2,343	3,174	W	4.9	4.6	6.3	6.7	N/A
Construction	11,919	13,377	3,817	3,222	5,411	34.5	31.8	10.2	6.8	10.4
Manufacturing	2,830	3,196	W	W	4,511	8.2	7.6	N/A	N/A	8.6
Transportation, Communication, Utilities	2,197	2,374	2,751	3,048	3,425	6.4	5.6	7.4	6.4	6.6
Trade	4,855	5,321	6,005	7,141	8,635	14.0	12.6	16.1	15.1	16.5
Finance, Insurance, Real Estate	961	1,346	2,282	2,893	3,349	2.8	3.2	6.1	6.1	6.4
Services	5,186	7,348	8,837	W	11,990	15.0	17.4	23.7	N/A	23.0
Government	5,793	6,666	7,029	7,682	8,382	16.8	15.8	18.8	16.2	16.0
Total	34,550	42,108	37,351	47,379	52,223	100.0	100.0	100.0	100.0	100.0
State of Colorado										
Agriculture	561,451	331,779	347,372	516,533	586,055	4.7	2.5	2.4	3.0	2.9
Mining	359,636	436,649	521,651	687,291	832,404	3.0	3.3	3.5	4.0	4.2
Construction	827,042	924,023	1,079,200	1,330,312	1,565,865	6.9	7.1	7.3	7.7	7.8
Manufacturing	1,830,693	2,066,754	2,403,978	2,835,930	3,341,825	15.3	15.8	16.3	16.4	16.7
Transportation, Communication, Utilities	925,687	1,051,255	1,204,047	1,445,049	1,688,324	7.7	8.0	8.2	8.3	8.4
Trade	2,144,302	2,397,011	2,626,618	3,015,638	3,527,459	17.9	18.3	17.8	17.4	17.6
Finance, Insurance, Real Estate	625,774	741,886	909,314	1,099,530	1,288,741	5.2	5.7	6.2	6.3	6.4
Services	2,006,010	2,196,462	2,490,737	2,960,515	3,472,165	16.8	16.8	16.9	17.1	17.3
Government	2,667,687	2,921,689	3,143,208	3,432,791	3,727,232	22.3	22.4	21.3	19.8	18.6
Total	11,948,282	13,067,508	14,726,125	17,323,589	20,030,070	100.0	100.0	100.0	100.0	100.0

Note: Percent of total detail may not add to 100 percent because of rounding.
W: Withheld to avoid disclosing confidential information.
N/A: Not available.
Source: Bureau of Economic Analysis, various years. Regional Ecnomic Information System. U.S. Department of Commerce, Washington, D.C.

Average personal income figures present a very mixed pattern in the resource area (Table 2-21), with several different trends obviously being present.

Local pay rates in most industries are not moving appreciably closer to state averages. The exceptions to this trend (transportation-communication-utilities in both counties, finance-insurance-real estate in Grand County, and government in Jackson County) involve cases of rapid growth, large firms, and a few high incomes in a small sector. Most local incomes seem likely to remain below state averages except in cases where new companies enter the area paying at nonlocal rates or where industries experience rapid growth.

TABLE 2-21 -- Average Personal Income by Industry

	1975	1976	1977	1978	1979	1978-79 as Percent of 1975-76
Grand County						
Agriculture	$1,844	−$3.814	$3,106	$13,376	$N/A	N/A

TABLE 2-21 -- Average Personal Income by Industry—Continued

	1975	1976	1977	1978	1979	1978-79 as Percent of 1975-76
Mining	36,412	22,250	17,400	23,714	N/A	N/A
Construction	19,024	21,212	17,154	14,739	17,824	81
Manufacturing	14,533	13,123	13,136	15,195	16,057	113
Trans., comm., utilities	18,038	20,571	23,474	24,084	28,471	136
Trade	9,432	9,147	8,979	9,051	9,705	101
Finance, ins., real est.	7,438	7,969	16,806	17,464	17,206	225
Services	8,048	8,602	9,059	10,145	10,509	124
Government	8,766	9,508	10,169	10,916	11,604	123
All Industries	11,531	11,917	10,837	11,637	13,583	108
Jackson County						
Agriculture	−7,597	6,336	N/A	26,038	−16,919	N/A
Mining	27,692	38,023	26,779	30,234	10,688	93
Construction	21,900	26,800	N/A	25,056	N/A	N/A
Manufacturing	10,512	11,940	N/A	N/A	15,318	N/A
Trans., comm., utilities	11,069	13,259	15,800	16,821	20,840	155
Trade	9,147	9,592	8,623	N/A	N/A	N/A
Finance, ins., real est.	12,000	13,571	11,647	12,278	14,000	103
Services	7,718	9,286	14,391	N/A	21,000	N/A
Government	7,719	8,729	9,787	10,813	11,796	137
All Industries	7,193	11,781	11,324	18,163	11,006	154
State of Colorado						
Agriculture	26,258	15,531	14,611	20,658	26,496	113
Mining	18,515	21,037	21,979	25,130	27,189	132
Construction	15,532	16,754	17,481	18,345	19,749	118
Manufacturing	13,458	14,514	15,759	16,941	18,444	126
Trans., comm., utilities	15,598	17,511	19,242	20,991	22,681	132
Trade	9,072	9,494	9,890	10,728	11,796	121
Finance, ins., real est.	10,980	12,553	14,429	15,742	16,928	139
Services	10,081	10,572	11,222	12,311	13,595	125
Government	9,742	10,445	11,233	12,208	13,105	125
All Industries	11,319	11,893	12,752	14,042	15,376	127
Per Capita Income						
Grand County	5,364	6,448	6,555	7,333	8,725	
Jackson County	3,861	5,123	5,640	7,981	6,112	
State of Colorado	6,006	6,526	7,204	8,102	9,114	

N/A: Not available.
Sources: Table 2-21; Bureau of Economic Analysis, April, 1981. Regional Economic Information System. U.S. Department of Commerce, Washington, D.C.

Local Government Finance

Local sources provide most of the revenues of counties, towns, and school districts in the resource area. As shown in Table 2-22, Grand and Jackson Counties obtain from 50 to 60 percent of their funds locally, while the communities are about 90 percent dependent on their own sources. Local revenues make up 70 to 90 percent of the school districts' budgets. Therefore, BLM actions in the resource area have the potential to impact local government finances significantly.

Rough measures of the adequacy of local funding sources are provided by assessed valuation per capita and retail sales per capita figures, which are included in Table 2-22. The figures show that both counties, all three school districts, and the towns of Fraser/Winter Park and Grand Lake should have sufficient tax bases for their needs. Fraser/Winter Park, Granby, and Grand Lake also have large volumes of retail sales because of their role as resort centers. The other communities lack these advantages and must operate from more limited local resources.

Probably the most significant impact on local government finances from BLM actions would come from increased capital improvement needs caused by population growth. Conversely, reduced population would increase the burden of any exist-

TABLE 2-22 -- Local Government Financial Data

	Counties		Communities						School Districts		
	Grand	Jackson	Fraser-Winter Park	Granby	Grand Lake	Hot Sulphur Springs	Kremmling	Walden	East Grand	West Grand	North Park
Percent of Total Revenue											
Local	68%	58%	99%	93%	[b]93%	91%	92%	93%	77%	87%	70%
State	24	13	([a])	5	[b]2	6	5	5	17	9	25
Federal	8	29	1	2	6	3	3	2	6	4	5
Per Capita Assessed Valuation	$14,625	$9,713	[c]$9.675	$4,796	[c]$12,412	$4,863	$3,154	$1,789	$10,248	$25,261	$9,713
Total Mill Levy	12.74	14.07	16.60	18.09	13.66	18.60	10.06	19.00	28.80	16.64	29.98
Per Capita Retail Sales	$9,555	$15,031	([d])	$21,843	([d])	$1,421	$7,278	[e]$8,197			
Sales Tax Rate	0	2%	([f])	2%	3%	2%	2%	([g])			
Bonded Indebtedness (000)											
General Obligation	$0	$0	$1,615	$765	$0	$73	$450	$39	$8,958	$6,590	$606
Revenue	0	0	141	30	189	151	728	250			

Notes: Community data include enterprise fund and special districts providing water and sanitary service and fire protection.

[a]Less than one-half percent.

[b]1978 data. Percentages for 1979 are distorted by unusually large tap fee revenues.

[c]Based on communities only, because population figures are not available for surrounding developments.

[d]Per capita retail sales cannot be determined because population figures are not available for surrounding developments.

[e]Difference between town and county retail sales results from mining sales classed as retail sales and shopping facilities outside Walden city limits.

[f]2% in Fraser, 4% in Winter Park.

[g]Walden receives county sales taxes collected within the city limits.

Sources: Division of Property Taxation, various years; *Annual Report* Colorado Department of Local Affairs, Denver, Colorado. Division of Local Government, various years; *Local Government Financial Compendium* Colorado Department of Local Affairs, Denver, Colorado. Colorado Department of Revenue, various years; *Annual Report* Denver, Colorado. Colorado State Auditor; Files. Data from local governments.

ing debt on remaining residents. It should be noted that rapid population growth can quickly require capital spending in excess of the resources of most local governments, in which case their only recourse is to seek financial assistance from state and Federal programs.

Community Facilities and Services

There is only one hospital in the resource area, the Kremmling Memorial Hospital at Kremmling. Use of the hospital is still below its 19-bed capacity, and no expansion is currently planned. However, if population continues to grow rapidly in eastern Grand County, which has ready access to no other hospital, this facility is likely to be inadequate to serve local needs in the near future. Jackson County residents use either this hospital or one in Laramie, Wyoming, and these services appear to satisfy their needs at the present slow population growth rate.

Eastern Grand County presents unique problems because of both the rapid rate of growth and the proportion of development that is outside established communities. Services are provided by four fire protection districts and about eight water and/or sanitation districts, plus the towns themselves. Adequacy of present capacity thus varies considerably within short distances. Systems said to be approaching capacity or in need of improvements include Fraser Sanitation, Winter Park Water and Sanitation, Granby Water, and Hot Sulphur Springs Water; others appear to be adequate at present. Additional facilities will be required, however, if growth continues at present rates. Expansion of facilities will be made more difficult and expensive by the need to serve previously undeveloped areas. Some consolidation of present small systems would seem desirable.

Kremmling and Walden appear to have fewer problems. An expansion of Walden's water system is getting under way. Other facilities seem to have sufficient capacity for the near future.

With the completion of a new high school, East Grand School District will have ample classroom capacity for the present. However, continuing rapid growth could completely utilize that capacity within a few years. West Grand School District is approaching capacity at the elementary school but

has adequate room for the upper grades. Capacity is sufficient at all levels in the North Park School District and should remain so in the near future at the present population growth rate.

As discussed in Chapter 1, this plan is designed to meet specific requirements for both livestock grazing and wilderness. Economic information related to these two programs is presented here.

Livestock Grazing

A total of 145 ranch operators hold grazing privileges on BLM lands in the resource area. Table 2-23 shows economic data on those ranches. The operators currently hold active preference rights for a total of 45,648 animal unit months (AUMs) of grazing annually. Their average actual use has been about 39,000 AUMs.

TABLE 2-23 -- ESTIMATED RANCH OPERATOR DATA 1981

Ranch Class	Head Sizes		Number of Ranches	Allotments - Actual Use			Gross Sales		Net Income [1]	
	Cattle	Sheep		BLM AUMs	Private AUMs	Total AUMS	Per Ranch	All Ranches	Per Ranch	All Ranches
1	1-149	.....	43	3,703	3,713	7,416	$23,389	$1,006,000	$−15,819	$−680,000
2	150-449	.....	61	15,461	23,193	38,654	53,311	3,252,000	−4,406	−269,000
3	450-749	.....	16	515	6,359	11,514	101,024	1,616,000	24,694	395,000
4	750-1,999	.....	17	10,614	22,649	33,263	232,340	3,950,000	15,453	263,000
5	2,000 or more	.....	5	3,540	14,045	17,585	691,967	3,460,000	254,572	1,273,000
8	1,400 or more	1,750 or more.	3	464	321	785	739,734	2,219,000	263,783	791,000
TOTAL	.....	.....	145	38,937	70,280	109,217	.....	15,503,000	.....	1,773,000
Estimated secondary business sales generated by ranching										$26,817,000
Estimated resource area total business sales										$352,877,000
Resource area total employment										4,122
Estimated resource area population										9,660
Estimated assessed valuation, all ranches										$10,420,000
Estimated resource area property tax revenue										$8,996,000

[1]Net income is defined as gross sales less operating expenses and depreciation.

A word about the analytical method is needed. Colorado State University (CSU) developed a series of ranch economic models based on a survey of ranches throughout Colorado (Bartlett, Taylor, and McKean 1979). The ranch models were grouped by regions of the state and by number and type of livestock. Ranch class numbers in Table 2-23 correspond to six of the eight models for Northwest Colorado (no operators fell into the other two classes). The models provide average gross sales and net income figures for each model, and the sales and income amounts in the table are calculated from the models. Thus, the figures do not show the actual financial records of the operators but are averages that are believed to be representative of actual conditions. Estimated changes in gross sales and net income that would result from changes in Federal AUMs by model are included in the CSU study, and those factors are used to project the effects of the alternatives on ranch sales and income.

Spending of ranch revenues for business expenses and personal consumption generates additional sales in the local economy. Based on an input-output study of the Kremmling region (McKean and Weber 1981), it is estimated that the $17.3 million in total sales and net income contributes about $26 million in secondary business to the area. This high amount results both from the spending of a large portion of ranch sales revenue with local businesses and from the local respending of that revenue by the businesses. However, compared to total local sales and other income sources of $595 million in 1979 (from the input-output study, adjusted to 1979 dollars), the combined primary and secondary sales generated by the operators ($43.3 million) amounts to 7 percent of the local economy.

Ranches make up part of the tax base for local government. Total 1981 agricultural assessed value in Grand and Jackson Counties was $10.8 million. Ranches holding BLM grazing privileges use an estimated 831,000 AUMs annually (including those from private and other government lands as well as BLM), which is 96 percent of the estimated 866,000

AUMs used in the entire resource area. Assuming that ratio to hold for ranch properties as well, the 145 ranches using BLM grazing would have a total assessed value of about $10.4 million. Although mill levies vary by county and location, it can be estimated that the ranches paid total property taxes in the neighborhood of $660,000, which is 7 percent of the estimated $9.0 million collected in the two counties.

Wilderness

Western Grand County would be affected economically by designation of the Troublesome WSA as wilderness. Kremmling is the only community that would be so affected.

Livestock grazing, which is the only current economic activity on the WSA, would be unchanged by wilderness designation. Although petroleum and natural gas resources potentially are present, the feasibility of commercial recovery is rated low, and no estimate is made of production values foregone. Therefore, only the recreation-oriented portions of the retail trade and services industries would be affected if the WSA was designated as wilderness.

SOCIAL ANALYSIS

For social analysis, the Kremmling Resource Area will consider Jackson and Grand Counties, omitting small portions of Larimer, Eagle, and Summit Counties.

The present social environments of the region cannot be understood without consideration of its history, geography, topography, climate, and location relative to the eastern slope population centers. There are three separate areas described below.

Jackson County, with the single incorporated town of Walden, is set in North Park, a high cold valley separated from the rest of Colorado by high mountain passes and opening to Wyoming on the north (see Figure 2-5). Ranching, lumbering, and mining are its main economic bases. A mountainous section of Larimer County lying across the Medicine Bow Range in this region orients to Wyoming and is virtually unpopulated.

Grand County consists of an east-west natural division of Middle Park, separated by Byers Canyon. Kremmling is the only population center in the western portion, a rugged ranching valley somewhat lower than North Park in elevation (see Figure 2-6). It is separated from northwest Colorado by high passes, but opens southward through Blue River Valley. Portions of Eagle and Summit Counties are found in this section.

Eastern Grand County has a T-formation of small towns: Hot Sulphur Springs on the west; Grand Lake on the north; and Tabernash, Fraser, and Winter Park on the south, with Granby as the central hub. Eastern Grand County accesses eastern, southern, and northern Colorado only by high passes. Trail Ridge Road from Grand Lake is closed except for a few months in summer. (The two natural divisions of Middle Park correspond also to the Census Bureau Kremmling and Granby divisions.)

The social data used here is largely from observation and informal interviews with a handful of leaders from each of the communities, together with figures furnished by them and from other county and state statistical reports.

Present Social Attitudes and Intergroup Relations

Valid data on attitudes directly pertinent to specific management alternatives in BLM's Kremmling RMP is not available, except as noted in various resource sections of the Continuation of Present Management Alternative (see Chapter 3). The following discussion thus attempts to describe those aspects of the general social setting which BLM decisions might reasonably be expected to affect.

Except for the Winter Park area, where upper class spillover from the Denver region occurs, there is little social class consciousness in the three social regions. The stratification system accords highest status in general to successful oldtimer ranching families. Energy workers, though often making higher incomes, are often considered more transient. Life styles largely reflect historical values of close-knit informality and closed-group self sufficiency.

Social controls are primarily informal even within such formal structures as schools and police departments. Little serious crime problem exists, though minor crime such as vandalism is increasing, especially in eastern Grand County. Residents describe themselves as "conservative", but there is evidence of much variety of views.

Some social convergence is occurring as towns join councils of government to share interests and concerns. Better roads, post-World War II population growth, and prosperity have brought eastern slope residents into the area for recreation and

second homes. Family ranching is giving way to absentee-owner ranching. Policies for management of the predominantly public lands of the whole area, including national forests, have shifted toward multiple-use planning and conservation.

A community forced to be self-sufficient by its isolation from the outside world forms a "closed society". Its members must often be independent of others in the physical sense (as when a blizzard strikes a ranch family whose nearest neighbors are several miles away). More important, however, is that families are dependent upon this community alone for satisfaction of social and emotional needs, and for other help in times of necessity (illness, death, marriage, barn-raising, and entertainment). Thus, intra-group dependency as well as personal self-sufficiency are characteristic of such small isolated communities.

Communities of this type were typical of the American frontier, and, except for east Grand County, Jackson and Grand Counties are still close to their Frontier history. Both the sense of group closeness and the spirit of individualism still exist in the values and mores of the long-term residents. These survivals enhance and uniquely flavor a set of otherwise fairly typical American attitudes: resistance to "government", general lack of social class consciousness, distrust of change, pride in the "self-made self", mores regarding manliness (such as in drinking habits), and rugged womanhood. Neighborliness and mutual help are still valued but less practiced.

North and Middle Parks, except for a small handful of Chicanos and Indians, are without ethnic or racial minorities. Conflicts are quite minor.

North Park

North Park more closely resembles its own past; its cohesiveness is from persistence of historical values rather than from social-structural strength. Social structures appear to be in the process of becoming more formalized as the community changes. The police department, for instance, solves some police problems through formal methods but still retains informality in much of its operation.

The small size of Walden and its isolation from other towns means that the number of persons having a specific interest in any given topic (such as stamps or rock collecting or great books) tends to be too small for these persons to organize into interest groups such as clubs. Therefore, some social and social-psychological needs remain unmet for some citizens. Some identifiable groups apparently participate only marginally in the community (the poor, some occupational groups, some newcomers).

The still-persistent individualistic stance of earlier times slows development of broader social ties. Some minor conflicts exist in the Walden area among occupational groups such as miners, lumber workers, etc. Lifelong residents are somewhat distrustful of newcomers, especially young transient oil rig workers. A small population base with considerable intermarriage over the years has produced an elaborate extended kinship system in the area. Thus some problems take the form of "family squabbles" rather than "intergroup conflicts". Anti-government feeling runs stronger in North Park than in the other two regions.

Kremmling

Kremmling seems to have the fewest generalized conflicts and a social structure (especially voluntary associations) sufficient for social cohesiveness and the performance of most needed community services. Change and growth have occurred (the AMAX Henderson Mill, for instance) but in spite of an annual growth rate of 5.9 percent between 1970 and 1980, relatively smooth social-structural adjustments have taken place. Some newcomers are omitted from the main social structure because no special effort is made to include them, but no systematic exclusion exists. Occasional minor conflicts occur between pass-through travelers, hunters, etc., and the local residents. Community spirit seems positive and shared loyalties center around school activities. In general, the outlying ranchers are well integrated into the social structure of the town.

Eastern Grand County

Eastern Grand County ranching never was of primary importance, and, except for Hot Sulphur Springs, the "pioneer spirit" has been replaced largely by tourist business, especially in the past few years.

The several communities are integrated socially and economically in many ways. Hot Sulphur Springs is the county seat providing countywide social services and law enforcement. The Winter Park ski area uses many low-paid seasonal workers, mostly young persons. Scarcity of reasonably priced housing in Winter Park forces many to find living quarters in the other communities, while a lack of employment opportunities in the area generally draws some commuting workers from the other communities to Winter Park. Granby is the commercial and utilities center for all of east Grand County.

All junior and senior high students are bused to Granby.

The towns are too small to support many social organizations. Churches and clubs therefore tend to be shared across communities.

These elements produce a regional economic and social integration; they also discourage the development of specific community social bonds. The influx of thousands of recreation transients in summer and winter, the spillover of cultural demands and influences (including drugs) from the eastern slope, visible extremes of wealth, and conflicts over proper use of public lands by different recreational interests also minimize small-town "atmosphere". Hot Sulphur Springs has gradually declined as Granby has become the regional center, while Grand Lake in winter turns more nearly into a small neighborhood society (though efforts are underway to attract more winter recreationists). The other towns are business/tourist oriented, accepting social change easily, apparently not much disturbed by limited community social life.

Most serious (though still minor) intergroup conflicts are between those who think enjoyment of the wild areas ought to be by "foot power" and those who prefer motor vehicles. In addition, dissatisfaction was expressed by several residents of other communities that Winter Park is trying to put off lower cost housing, supportive services, industry, etc., onto other towns, though it is not clear that such an intent actually exists.

Formal Social Structures and Services

All the incorporated towns in the region have local government structures consisting of a mayor and an elected six-person town council, a six or seven-person planning board, and a handful of paid town employees headed by the town clerk.

County commissioners, county zoning boards, and county-based services are located in the two county seats, Walden and Hot Sulphur Springs. Social welfare services in Jackson County are provided by one part-time social worker. Grand County social services are centered in Hot Sulphur Springs with several full-time social welfare specialists, each of whom covers the county in his/her own professional category.

Colorado West Regional Mental Health Center in Glenwood Springs has an office in Granby serving both Jackson and Grand Counties. Services are available regularly three days a week in Kremmling and two days a week in Walden, full time in Granby, and on demand anywhere else in either county. Neither county has an alcohol detox center -- the nearest are in Craig or Denver.

Kremmling's hospital serves both counties. The whole region participates in the Denver-based helicopter Flight-for-Life program. Only Kremmling and Granby have near adequate medical personnel. Granby and Kremmling have Senior Citizen programs, including plans for senior housing. Granby's program serves all of East Grand County. Table 2-24 portrays medical services for the resource area.

North Park District in Walden provides public education for all Jackson County. Grand County has two school districts. Kremmling has three schools for the West Grand School District. In East Grand District, new elementary schools have been opened in Fraser and Grand Lake. Junior and senior high students attend in Granby. School enrollments are below capacity over the entire area, and most buildings are new or newly remodeled, containing all essential special use facilities. Counseling, career guidance, remedial assistance, and enrichment programs are adequate; achievement scores exceed the national average, but fewer than the usual proportion of average high school graduates go on to college.

Teacher turnover is not excessive. Discipline problems are virtually nonexistent in the schools, though teen drinking is a problem to some degree in most towns, according to some local officials.

Both Grand and Jackson Counties have agricultural extension programs and active 4-H club projects. College extension courses are offered in Kremmling, Walden, and Granby. Walden and Hot Sulphur Springs provide small historic museums; small libraries are found in all the towns.

Kremmling and Walden have 3-man police departments, Grand Lake has a town marshall and deputy, and the other incorporated towns have contract arrangements with the county sheriff's department for police protection.

Crime rates in both counties have been on the rise but types of problems differ. Kremmling's problems are often associated with hunting season pass-throughs, including small thefts. Walden's increase is largely due to a crackdown on disorderly conduct of oil rig and other transient workers. Eastern Grand County has problems typically connected with summer tourism, winter concentration of well-to-do young skiers, and the spillover from the Denver area of deviant urban mores, such as drug abuse, with some of these influencing local youth.

Fire protection in both counties is by volunteer fire departments. Towns and ranching hinterlands share in law enforcement and fire protection. Cooperative arrangements with the Forest Service and

TABLE 2-24 -- Medical Services - Kremmling Resource Area

January, 1981

Town	Doctors/ Type	Hospital/ Distance	Capacity	Occupancy Rate	Nursing Home	Detox Center	Comment
Walden	1 G.P.	No-62 mi. (Kremmling)	--	--	No	No	Ambulance Service to Laramie, Kremmling, Ft. Collins, Denver. Participant, Helicopter Flight-for-Life program (Denver).
Kremmling	5 G.P./ Spec. 1 Dentist	Yes	19 beds	51%	No*	No (AA Chapter)	*In dire need hospital has permitted person to remain in hospital no charge. All services except critical emergencies Women's Aux. provides extra services as needed. $225,000 remodeling of old building for offices in progress. 75 employees (40 professional).
Hot Sulphur Springs	No	No-17 mi. to Kremmling	--	--	No	No	
Granby	6 G.P./ Spec. 1 Dentist	No-27 mi. to Kremmling (2 clinics)	--	--	No	No (AA Chapter)	
Grand Lake	No	No-40 mi to Kremmling	--	--	No	No	
Fraser	No	No-42 mi. to Kremmling East slope possible	--	--	No	No	
Winter Park	5 G.P./ Spec. (winter seas.) 1 Dentist	No-47 mi to Kremmling East slope possible (2 clinics)	--	--	No	No	

BLM exist for sharing both manpower and equipment as needed for firefighting.

Regular cultural events (concert series and Steamboat Repertory performances) are held in Kremmling and Granby. East Grand has summer theater in Grand Lake and Winter Park. These and other towns have other regular community events such as rodeos (Kremmling and Walden), snowmobile and crosscountry ski events (Grand Lake, Winter Park), and school athletic contests (Kremmling, Walden, and Granby).

Voluntary Associations

Generally, in the smallest communities almost all services and controls are at the personal level. Growth tends to lead to increasing bureaucratization of social structures, thus changing many social relationships from personal to impersonal. The "density of acquaintanceship" (Freudenburg 1980) is reduced as more strangers move in; informal social control mechanisms, such as gossip, neighborhood supervision of children, etc., become formalized into police departments and social welfare offices.

As noted earlier, in the smallest communities persons sharing specialized interests may be too few to support organizational structures. Friendship

clusters and private philanthropy tend to be the principal vehicles for filling social needs. In small towns some social services and many social-psychological needs are fulfilled through a structure of voluntary associations -- those organized interest groups to which persons belong by their own choice, such as hobby clubs, men's clubs, etc. If very small communities are geographically close, voluntary associations may include members from several towns.

Three distinguishable types of such community structures exist in the Kremmling Resource Area. Kremmling is large enough to support numerous voluntary associations, which fill most gaps in the formal services structure and also provide opportunities for fulfilling a variety of citizen social-psychological needs. Walden is both smaller and more isolated than Kremmling. Its voluntary association structure is less complete, leaving gaps in community services and producing a lack of social-psychological fulfillment for some citizens. Individual family and friendship groups are of correspondingly greater importance there.

The eastern half of Grand County, as already noted, contains a number of quite small towns, close together, interrelated both economically and for social services delivery. Strictly local loyalties seem rather weak, but the whole area shares memberships in some voluntary associations and in church memberships. Friendship groupings probably also occur across communities to some extent. There is an expressed commitment by many to the beauty and commercial development of the entire area.

CHAPTER 3

ALTERNATIVES INCLUDING THE PROPOSED RESOURCE MANAGEMENT PLAN

CHAPTER 3
ALTERNATIVES INCLUDING THE PROPOSED RESOURCE MANAGEMENT PLAN

SUMMARY

Chapter 3 describes the seven alternative multiple use land management plans in detail as well as the process that was followed to develop them. Alternatives considered, but not fully described and analyzed, are also mentioned.

The seven alternatives considered were:

Continuation Of Present Management (No Action)

This alternative allows for the management and flow of outputs from the public lands and resources in the Kremmling Resource Area at their present levels. A change, however, would be required in the status of the Troublesome Wilderness Study Area (WSA), in order to comply with provisions of the Federal Land Policy and Management Act (FLPMA) requiring that suitable or nonsuitable recommendation be made for all WSAs. The Troublesome WSA would not be recommended for wilderness designation.

Proposed Resource Management Plan (Preferred)

This alternative is considered by the Bureau to be the one that responds best to the issues in a multiple use framework. It emphasizes the management, production, and use of the renewable resources on a majority of the public lands in the resource area. In addition, sufficient suitable coal lands would be made available for the continuation and possible expansion of the coal industry in Jackson County. Isolated tracts of public lands would be made available for disposal as needed to support the recreation and tourism based economies in eastern Grand County.

Energy And Minerals

This alternative emphasizes the exploration, development, and transportation of energy and other critical mineral resources on Federal lands within the resource area.

Economic Benefit

This alternative emphasizes the management and production of all public lands resources that would benefit local and regional economies.

Renewable Resources

This alternative emphasizes the management, production, and use of the renewable resources on public lands in the resource area.

Recreation

This alternative emphasizes providing for and managing recreational opportunities and ensuring the availability of public lands to meet recreational needs.

Natural Environment

This alternative emphasizes the protection and enhancement of the natural environment within the resource area.

INTRODUCTION

The Bureau's planning regulations require that "several complete, reasonable resource management alternatives shall be prepared for the resource area. One shall be for no action, which means continuation of present levels or systems of resource use. The alternatives reflect the variety of issues and guidance applicable to the resource area". (43 CFR 1616.5).

The National Environmental Policy Act (NEPA) regulations (40 CFR 1502.14) further require decisionmakers to "rigorously explore and objectively evaluate all reasonable alternatives; and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated".

All of the alternatives developed for the management of the Kremmling Resource Area are:

1. Multiple use alternatives that are realistic and implementable.

2. Developed in accordance with FLPMA and NEPA regulations; Bureau planning regulations; principles of multiple use and sustained yield; and other applicable laws, regulations, and minimum standards.

3. Subject to existing valid rights (mining claims, rights-of-way, leases, etc.).

4. Structured so as not to eliminate any Bureau programs or activities that respond to an economic or social dependency.

5. Designed so as not to totally exploit any resource or totally eliminate any resource program or activity.

6. Responsive to the issues that were identified. Each alternative addresses or resolves issues or groups of issues.

7. Designed to provide BLM managers a framework within which to make multiple use decisions or develop more site-specific activity plans or actions.

FORMULATION OF ALTERNATIVES

A series of steps was used to formulate the multiple use alternatives for the Kremmling Resource Area. These steps started early in the planning process and included:

1. **Issue Identification** - The general public, local and state governments, other Federal agencies, and user groups all identified issues relating to management of the public lands (Refer to Chapter 1).

2. **Analysis of Issues** - The issues were analyzed and grouped. From these issues, planning questions were developed. The answers to these questions became the components of the alternatives necessary to resolve the issues (Refer to Chapter 1).

3. **Analysis of Resource Data and the Current Management Situation** - Available inventory data was analyzed to determine quality, quantity, location, condition, and trend of the resources based on present management.

4. **Capability Analysis** - A range of realistic management opportunities or potentials were identified for each resource, based on its capabilities.

5. **Priority Use Mapping** - The priority management areas for each resource were identified on maps.

6. **Identification of Alternatives** - Goals for alternative land use plans were identified. Each alternative was intended to resolve a group of issues in a multiple use context.

7. **Alternative Formulation** - A logical mix of resource management opportunities and priority use areas was developed for each alternative in a theme that best achieved the goal of that alternative. Priority use areas are areas where a specific resource or use is to be given management emphasis.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Some alternatives were considered but eliminated from detailed analysis. The alternatives and the reasons for their elimination are identified in the following narratives.

Minimum Management and Output Alternative

This alternative would provide for little or no management of the public lands and resources. The goal would be to provide only sufficient management necessary to protect human life, public health and safety, and the environment. Hazard reduction, fire suppression, insect or disease control, limited road maintenance, and cooperative management with adjacent landowners or local governments are some of the management actions that would occur.

No livestock grazing, outputs of forest products or minerals, land disposal, recreational developments, or wildlife habitat improvements would be provided for under this alternative. Incidental outputs, such as wildlife use and dispersed recreation, would continue.

This alternative was eliminated from detailed study because it is not a realistic, implementable alternative. It is contrary to the principles of multiple use and sustained yield and does not meet the requirements of the Federal Land Policy and Management Act of 1976. Ultimately, it would lead to deterioration of the productivity of public lands and resources. It would also cause significant economic and social hardships to segments of the public who are dependent on a continuous flow of goods and services from the public lands.

The social, economic and environmental consequences of removing livestock from all public lands in the resource area are specifically discussed in Appendix 5 of this document (The "No Grazing" Alternative).

Maximum Output Alternatives

Several alternatives were identified that would provide for the maximum output of a resource based on the physical or biological capability of that resource. No consideration was given to the needs of other resources. Maximum production alternatives were identified for coal, livestock, wildlife, and forest products.

Coal. All known Federal coal would be leased in the resource area. Approximately 200 to 275 million short tons of coal could be mined through a combination of surface and underground mining methods.

Livestock. All the existing available and usable range forage on public lands in the resource area would be allocated solely for livestock grazing. Approximately 63,500 AUMs would be available for livestock production (50,225 AUMs suitable for cattle and 13,275 AUMs for sheep).

Applying intensive range management to the grazing lands would eventually result in approximately 115,000 AUMs of forage available for livestock production.

Wildlife. All existing available and usable forage on public lands in the resource area would be allocated to wildlife species, including deer, elk, and antelope. Approximately 65,545 AUMs of forage would be available for an estimated population of 9,500 antelope, 32,000 elk, and 37,000 deer.

Forest Products. All productive forest lands in the resource area (96,000 acres) would be included in the calculation of the allowable cut. This would result in an annual harvest of 7.2 million board feet of timber.

Applying intensive forest management practices to all productive forest lands would eventually result in an annual harvest of 13.4 million board feet.

The maximum output alternatives were eliminated from detailed study because they are not realistic or implementable alternatives. They are inconsistent with the principles of multiple use and sustained yield and do not meet the requirements of the Federal Land Policy and Management Act of 1976. They address only a single use or issue. Loss of future management options or other resource values and the loss of a continuous flow of a variety of goods and services from the public lands would result in unacceptable levels of adverse environmental impacts.

ALTERNATIVES CONSIDERED AND ANALYZED IN DETAIL

Seven alternative multiple use land management plans were identified and are presented in this chapter. Impacts are analyzed in Chapter 4.

Each of the seven alternatives identifies:

1. Priority areas, which are areas where a specific resource or use will be given management emphasis. These areas are displayed on each alternative map that were in the Map Addendum of the Draft RMP/EIS.

2. Compatibility, which relates to the limits or restrictions that must be placed on resources or uses in order to avoid conflict within the priority areas.

3. The types of uses or activities that would be excluded within priority areas.

4. The management intensity that would be applied to each resource (intensive or limited management).

5. The types of management practices that would be associated with implementing each management intensity.

6. The lands suitable or unsuitable for development or use.

7. The types of support actions that would be needed to implement each alternative.

Activities or uses not specifically addressed in the RMP, such as small-scale projects (right-of-way applications for rural telephone lines, communications sites, free use permits, etc.), would be authorized if they met legal requirements and were compatible with the management emphasis of a given area. Where necessary, appropriate limits or restrictions would be required to ensure compatibility.

The seven alternatives considered, along with the recommendations made in them, do not contradict the terms, conditions, or decisions of any known officially approved or adopted resource plans or related programs, policies, laws, or regulations of any local, regional, state, or Federal agency or government.

MANAGEMENT PRESCRIPTION CATEGORIES

Management categories have been developed for most of the resource programs within the

Kremmling Resource Area. These categories will be applied to each of the seven alternatives presented later in this chapter. They will be fully described here and only referenced in each alternative. For example, either intensive or limited management is prescribed for forest products under each alternative. To fully comprehend these terms, the reader will need to refer back to this section.

The categories describe the intensity of management to be applied to different resources. They also identify types of management practices likely to be associated with each management intensity.

Livestock Grazing

Intensive Management

Alternatives calling for intensive management of grazing allotments would result in all the grazing allotments in the Kremmling Resource Area being managed according to one of the three levels described below:

Level One

Objective: To maintain or improve forage production in grazing allotments that are currently in satisfactory condition.

The following allotment criteria would be applied:

1. Estimated carrying capacity allocated for livestock is the same or more than current active licensed use as indicated by the range condition inventory/monitoring studies data. No significant areas within a grazing allotment are receiving greater than 60 percent utilization on the key forage species.

2. The allotment is producing 75 percent or more of its potential for livestock forage and the allotment has a potential of less than 20 acres/AUM.

3. No major conflicts exist between livestock and wildlife for available forage or the use of critical riparian zones.

4. Allotments are comprised of greater than 1,000 acres of public land and public lands account for more than 40 percent of the total allotment AUMs.

5. Opportunities may exist for positive economic return from public investments.

Management actions would include the following:

1. Maintaining or increasing livestock stocking rates and adjusting seasons of use, based on the range condition inventory and monitoring studies

2. Implementing comprehensive use-supervision and monitoring studies on those allotments that warrant an increase in stocking rates; conducting minimum intensity use-supervision and monitoring on remaining allotments. Comprehensive monitoring studies would include the collection of actual use, utilization and climatic data in the short term in order to supplement inventory data. Trend studies would be added as management plans were developed. Minimum intensity use supervision and monitoring would include compliance checks to ensure adherence to annual grazing authorizations.

3. Consulting with all grazing permittees/lessees concerning adjustments in allocation and management decisions affecting their allotments

4. Investing in cost-effective range improvements (primarily through private investment) as needs arise to further improve forage condition. Specifically, additional water developments may aid in improving allotment management by lengthening the season of use, spreading usage more evenly over the range, and opening up more range to grazing. Additional fencing may be required in order to provide for better distribution of grazing. Interior pasture fencing would allow for opportunities to defer or rest portions of an allotment seasonally. Other management facilities, such as corrals and holding pens, may be authorized where the need arises for the containment or shipping of livestock.

Opportunities may also exist for the authorization of vegetation manipulation in areas where optimum herbaceous forage production is inhibited by undesirable brush species. Manipulations would be designed on range sites that have a medium or high potential for forage production and that would meet the following additional criteria:

a. Grazing distribution and use of an allotment would be enhanced.

b. Treated areas could be isolated and rested for a minimum of two spring growing seasons following the manipulation.

c. Wildlife habitat values would be enhanced.

The types of vegetation manipulations that would be considered include chemical control, prescribed burning, and mechancial control. A description of each of these methods and the criteria under which they would be used is given in Appendix 1.

Additionally, artificial seeding may be required following a vegetation manipulation when insufficient desirable forage plants remain or to supplement needed early spring or late fall pasture. Such areas would receive proper seedbed preparation, followed by the drilling or broadcasting of selected seed.

All range improvement proposals would be subject to site-specific environmental analysis and would adhere to development plans designed to provide a framework for meeting multiple-use objectives.

Level Two

Objective: To improve the forage production and condition in grazing allotments that are currently in unsatisfactory condition. Improve allotment condition to meet Management Level One standards.

The following allotment criteria would be applied:

1. Allotments have the potential for medium to high vegetation productivity, but are currently producing at less than 75 percent of potential (present forage condition rated unsatisfactory).

2. Present grazing practices are inadequate and/or nonproductive.

3. Conflicts exist between livestock and wildlife demands for available forage and/or habitat.

4. Allotments have more than 1,000 acres of public land and public lands account for more than 40 percent of the total allotment AUMs.

5. Opportunities exist for positive economic return from public investments.

Management actions would include the following:

1. Ranking allotments to receive priority management, beginning with those that have wildlife/livestock forage or habitat conflicts and watershed and water quality problems associated with livestock grazing use.

2. Adjusting stocking rates to proper allocation levels in accordance with the range condition inventory/monitoring studies data.

3. Designing grazing systems, providing minimum rest requirements, and/or adjusting season of use for all allotments. Grazing allotments may also be combined for management purposes. Additionally, other agency lands (state, U.S. Forest Service) would be considered for incorporation into consolidated allotment management plans (AMPs).

4. Conducting comprehensive use supervision and monitoring to assess the effectiveness of prescribed grazing systems and/or to refine and update the range condition inventory data. Comprehensive monitoring studies would include the collection of actual use utilization, and climatic data in the short term to supplement inventory data. Trend studies would be added as management plans were developed.

5. Consulting with all permittees/lessees concerning adjustments in allocation and management decisions affecting their allotments.

6. Investing in cost-effective range improvements (primarily through public investment) to implement grazing systems and meet the objectives of this management level as well as the specific objectives of AMPs. The specific types of range improvement projects needed are listed by allotment in Appendix 4.

Stock water developments would be authorized as a basis for implementing grazing systems; additional water sources could be turned on and off to regulate cattle distribution and use within pastures. This would allow previously developed water facilities to receive less concentrated use and would enhance grazing uniformity within pastures/allotments.

Interior fencing would be authorized to develop pastures for implementation of grazing systems that would provide alternate periods of rest for each area of an allotment. Other management facilities, such as corrals and holding pens, would be authorized where critical needs arise for the containment and shipping of livestock.

Vegetation manipulations (mechanical, spraying, and burning) would be authorized, along with reseeding, in areas that are currently producing significantly under their potential forage production. These manipulations would be designed on range sites that have a medium to high potential for forage production and that would meet the criteria for vegetation manipulations as described for Management Level One and in Appendix 1.

All range improvement proposals would be subject to site-specific environmental analysis and would adhere to development plans designed to provide a framework for meeting multiple use objectives.

7. Allocating additional forage made available through intensive management practices first to satisfy grazing preferences (restore any suspended nonuse) and second to allow for increases above preference on a case-by-case basis.

Level Three

Objective: To maintain the existing allotment situation and provide for management opportunities as needs arise for operators/other land use agencies.

The following allotment criteria would be applied:

1. Allotments have a low vegetation production potential and are producing near their potential (greater than 20 acres/AUM).

2. Forage/habitat conflicts between livestock and wildlife are limited or not considered significant.

3. Allotments are comprised of less than 1,000 acres of public lands, or public lands account for less than 40 percent of the total allotment AUMs. There is no potential for separating blocks of 1,000 acres (or less) for the purpose of consolidated management as a unit or with other blocks of public range.

4. Opportunities for positive economic return on public investment do not exist or are constrained by technological or economic factors. Opportunities for private investment may exist.

5. The public lands in an allotment have been designated for disposal, have been leased for surface coal mining, or will be designated for development and expansion to support the existing coal industry.

Management actions would include the following:

1. Adjusting stocking rates and/or season of use where necessary on allotments where the range condition inventory and monitoring studies have been completed. Where the inventory has not been conducted, stocking rates and season of use would remain as currently authorized.

2. Consulting with all grazing permittees/lessees concerning adjustments in allocation and management decisions affecting their allotments.

3. Emphasizing development of long-term agreements with the Soil Conservation Service in order to incorporate public lands into a comprehensive ranch management plan.

4. Authorizing range improvements (primarily through private investment) in order to meet the requirements of comprehensive ranch management plans. Vegetation manipulations may be authorized as a management tool where opportunities exist for improving range condition. All range improvement proposals would be subject to site-specific environmental analysis.

5. Conducting periodic compliance checks to ensure adherence to annual grazing authorizations.

All of the grazing allotments in the Kremmling Resource Area have been placed in one of the three management levels described above depending on the alternative. To determine which management level an allotment has been categorized under by alternative, refer to Appendix 3.

It must be noted that allotments categorized under Management Level Two have significant resource conflicts, problems and management opportunities and, therefore, have highest priority for implementation, followed by Level One and Level Three allotments. The specific resource problems, conflicts and management opportunities for Level Two and Level One allotments are detailed in Appendix 4.

It is also recognized that as situations, events or conditions change allotments may be placed in a different management level to better correspond to their needs.

Forest Products

Intensive Management

Forest lands growing commercial tree species (lodgepole pine, Douglas fir, or Englemann spruce) on productive growing sites (producing 20 cubic feet of wood fiber per acre per year) on lands not withdrawn for other resource needs would be intensively managed to produce a variety of forest products on a sustained yield basis. Intensive management would include the following practices:

1. Giving emphasis to improving vigor and productivity by converting decadent forest stands into younger growth. The oldest stands would be harvested first and no harvest would be allowed on stands younger than 90 years except for thinning. Mature and overmature stands would usually be clearcut in parcels of less than 40 acres. After harvest, the remaining slash would be cleaned up with machines or, more rarely, by fire to ensure the natural renewal of seedings within five years.

2. Cutting forest stands, in some instances, by using the shelterwood method. Each 10 years, a third of a mature stand would be removed and would be replaced by the establishment of reproduction under the partial shelter of the remaining mature trees. The final cut would remove the remaining seed trees. The 40-acre limitation on clearcuts would not apply to shelterwood harvests, which could be of any size.

3. Allowing commercial thinning in stands between 50 to 80 years of age.

4. Prescribing precommercial thinnings for stands 20 to 30 years of age.

5. Initiating artificial regeneration if adequate stocking were not achieved within five years of final harvest or site preparation.

6. Implementing immediate salvage or accelerated harvests after catastrophic events such as fire, windstorm, or insect epidemics.

7. Giving a high priority to intensive management areas for fire protection and insect and disease control.

Limited Management

Forested lands growing woodland or noncommercial tree species (pinyon-juniper, Ponderosa pine, sub-alpine fir, or aspen), nonproductive growing sites (producing less than 20 cubic feet of wood fiber per acre per year), or sites withdrawn from planned harvest for other resource needs or because they are economically inaccessible would not be intensively managed. Custodial management of these areas would be emphasized for the maintenance and protection of the forest environment. Timber harvest would be permissible, but would not be a goal of management under sustained yield principles. Harvesting, primarily salvage, would be mostly for posts, firewood, etc. Fires, insects, and disease would be controlled but would be a lower priority than for the intensively managed areas. No intensive forest management practices, such as thinnings or artifical regeneration, would be planned.

Aquatic Wildlife

Intensive Management

Streams to be intensively managed to improve the existing fisheries resource would meet the following criteria:

1. A significant portion of the stream is on public lands and Bureau initiated management would have a measurable effect on improving the fisheries.

2. Sufficient flows exist in the stream to support game fish populations.

3. Stream conditions need improvement and would respond to management.

4. A water right protecting instream flow has been filed by the Colorado Water Conservation Board under S.B. 97.

Types of management practices that could be employed to improve the fisheries would include:

1. Placing gabions to stabilize streambanks

2. Placing riprap to protect banks from erosion

3. Revegetating streambanks to stabilize them

4. Constructing fences to restrict livestock from damaging riparian areas

5. Constructing pools to provide fish habitat at low flows

6. Removing debris that restricts flow or fish migration

7. Working with other agencies or landowners on a cooperative basis to improve aquatic habitat

8. Providing protection by imposing restrictions on surface disturbing activities (See Limited Management Restriction)

Limited Management

Limited management would be conducted on the streams not meeting intensive management criteria.

Management to protect fisheries would be through restrictions placed on uses or activities that might reduce the fisheries resource. Types of restrictions would include:

1. Leaving buffer strips of vegetation between streams and areas of surface disturbance, such as clearcuts, roads, or surface mining.

2. Building sediment gathering structures to prevent sediment from entering streams from surface disturbing activities.

3. Locating roads out of riparian or wetland areas. Roads crossing streams would be positioned so as to cause minimal damage to riparian, stream, or wetland habitat and to provide for unobstructed migration of fish.

4. Restricting livestock from using riparian areas.

5. Preventing debris or toxic materials from entering streams.

6. Improving riparian habitats.

Terrestrial Wildlife

Intensive Management

Important terrestrial wildlife habitats considered for intensive management would include:

1. Essential habitats required by species such as deer, elk, bald eagles, antelope, and sage grouse for winter survival

2. Defined courtship and breeding areas for upland game birds and nongame species, such as songbirds and birds of prey

3. Migration routes

4. Nesting, fawning, and calving areas

5. Other limiting habitats, such as riparian zones

Intensive management practices could include the following actions:

1. Avoiding surface disturbing activities (ORV's, etc.), near critical habitats.

2. Providing a buffer area between disturbing activities and important habitat when that habitat is in use.

3. Designing vegetation manipulations of important habitats so they are beneficial to wildlife.

4. Ensuring rapid revegetation of plant species beneficial to wildlife after surface disturbing activities.

5. Replacing habitats lost to long-term disturbances, such as coal mining.

6. Protecting critical riparian habitats from livestock grazing by fencing and/or management systems.

7. Cooperating with the Colorado Division of Wildlife to manage public lands not leased for livestock grazing in T1S, R82W, and T2S, R82W as big game winter range. These public lands should not be leased for livestock grazing due to potential livestock/big game forage competition problems.

8. Designing livestock grazing systems that would improve forage production for game and nongame species.

Limited Management

The noncritical habitats, such as yearlong or summer ranges, would require limited management. Types of actions or practices would include:

1. Restricting types and extent of vegetation manipulation

2. Ensuring rapid revegetation with species beneficial to wildlife after surface disturbing activities

3. Designing timber sales to increase open areas in dense forest habitat

4. Designing livestock grazing systems that would improve forage production for both game and nongame species

5. Constructing or developing watering facilities for joint use by livestock and wildlife

Water Resources

Intensive Management

Streams not meeting state standards and/or having unstable channels could either be improved to meet minimum standards or have their channel stability improved to good condition, provided the streams met the following criteria:

1. Twenty percent or more of the watershed is in a moderate to severe erosion class (sensitive watersheds).

2. The land pattern is such that watershed improvement projects initiated by BLM would have a noticeable effect on improving the water quality.

3. The pollution source is on public land.

4. Fish and wildlife would benefit from channel stability.

For streams that did not meet the state standards and above criteria, the Bureau would cooperate with other agencies or adjacent landowners to improve the water quality.

Management practices employed for water quality improvement would include:

1. Monitoring water quality or stream bank stability

2. Improving vegetation cover on watersheds by developing grazing systems for livestock that would provide an increase in plant density and stabilize the soil

3. Initiating streambank stabilization projects

4. Restricting the use of riparian areas by livestock to protect riparian habitat and to promote streambank stability

5. Constructing check dams on intermittent stream drainages to reduce sediment load caused by upland erosion

Restrictions would be imposed on other activities or uses of the public lands, including the following:

1. Excluding surface disturbing activities from sensitive watersheds where they were contributing to, or had the potential for contributing to, degradation of water quality

2. Providing buffer strips between streams and surface disturbing activities, such as mining, road building, clearcutting trees, etc.

3. Ensuring rapid revegetation of disturbed areas

4. Utilizing water course structural engineering practices (gully plugs, gabion structures, dams, riprap, etc.)

5. Limiting ORV usage in sensitive watersheds

6. Controlling erosion or runoff on disturbed sites

7. Limiting vegetation manipulations or treatments in sensitive watersheds to spraying, aerial seeding, or designed grazing systems

8. Placing timing restrictions on surface disturbing activities to avoid spring thaw and runoff seasons

9. Constructing snow management structures for watershed improvement

10. Complying with all Federal, state, and local water quality regulations

Limited Management

Limited management would be applied to maintain existing water quality. Measures that could be employed are:

1. Excluding surface disturbing activities from sensitive watersheds, where resulting erosion would degrade water quality

2. Providing buffer strips between streams and surface disturbing activities, such as mining, road building, clearcutting trees, etc.

3. Ensuring rapid revegetation of disturbed areas

4. Controlling erosion or runoff from disturbed sites

5. Limiting vegetation manipulations or treatments of sensitive watersheds to spraying, aerial seeding, or designed grazing systems

6. Placing timing restrictions on surface disturbing activities so as to avoid the spring thaw and runoff seasons.

Visual Resources

Limited Management

Protection of visual quality would be achieved through mitigating measures designed to reduce the degree of contrast with the surrounding landscape. Types of mitigating measures may include:

1. Relocating a project

2. Redesigning a project

3. Screening or buffering

4. Using nonreflective paints or materials

5. Ensuring rapid restoration and revegetation of surface disturbance areas

Recreation

Intensive Management

Special recreation management areas (SRMAs) would be established where intensive management would be required to maintain, protect, or enhance recreation opportunities. Areas would be established if they met, or had the potential for meeting, one or more of the following criteria:

1. An area has recreation opportunities not readily available elsewhere that would be denied to the public unless proper management was applied.

2. Significant user conflicts exist.

3. Visitor safety problems exist.

4. Potential for recreation resource damage exists.

5. Adequate water resources exist and are protected by water right filings made by BLM.

Management emphasis would be directed to accommodating both existing and projected long-term use levels, providing resource protection, promoting visitor safety and information, and reducing conflicts among uses and users. Actions that would be taken to provide recreation opportunities in these areas include:

1. Developing management prescriptions for each SRMA.

2. Designing, constructing, and maintaining improvements necessary to meet management objectives for an area. These could include sanitary facilities, campsites, parking areas, launching areas, etc., necessary for visitor use and safety, site protection, and/or site stabilization.

3. Placing restrictions on recreation users where significant conflicts exist, such as restricting areas to specific types of recreation use.

4. Providing user information through signs, brochures, and maps.

5. Supervising use and monitoring regularily.

6. Placing restrictions on other conflicting resource uses that may degrade recreational opportunities or improvements, or compromise visitor health and safety. This may include avoidance, timing restrictions, buffering, etc. A no surface occupancy stipulation would be placed on all oil and gas leases issued on developed recreation sites, primary river use sites along the upper Colorado River, the North Sand Hills, and major dispersed sites, such as hunter camps. No new material sales (e.g., gravel) would be allowed within SRMAs. Livestock grazing would be excluded from developed recreation sites.

7. Appraising developed recreation sites for their mineral potential and withdrawing them from mineral entry if necessary to protect the public investment in facilities.

Limited Management

Public lands not included in special recreation management areas would be managed for dispersed recreational uses, such as hunting, hiking, and sightseeing. These would be areas where significant recreation issues or management concerns are limited and intensive management or protective measures would not be required in the long term to ensure providing of the recreation opportunities.

Management emphasis would be directed to those actions necessary in making dispersed recreation opportunities available on a continuing basis. Actions to be taken would include:

1. Providing limited visitor information through signing of access points, public land boundaries, and hazardous or restricted areas

2. Acquiring public access to public lands with significant recreation opportunities where access does not presently exist

3. Providing minimal maintenance of undeveloped sites, e.g., litter collection from hunter camps

4. Carrying out limited use supervision or monitoring

Cultural Resources

Intensive Management

Cultural sites on, or eligible for inclusion to, the National Register of Historic Places would be intensively managed. Management actions may include:

1. Implementing site enhancement, which includes rehabilitation, reconstruction, etc.

2. Developing interpretive facilities

3. Initiating a protective withdrawal of National Register of Historic Places sites to exclude any future uses of the site

4. Pursuing further research data recovery and interpretation

Limited Management

Limited management could occur on any significant cultural site. Management actions or protective measures could include:

1. Inventorying areas containing cultural resources potentially significant for scientific and/or interpretive purposes.

2. Inventorying all areas before beginning surface disturbing activities. Inventory intensity would be based on potential impacts.

3. Determining the eligibility of cultural resources for nomination to the National Register of Historic Places; priority would be given to those in potential danger or with potential to yield important information.

4. Protecting cultural sites on, or eligible for inclusion on, the National Register of Historic Places. Management measures may include:

   a. Avoidance of sites by disturbing activities

   b. Data recovery of cultural resources where avoidance is impractical or impossible

Paleontological Resources

Limited Management

Geologic formations likely to contain significant paleontological resources would have limited management applied to them to protect these resources.

Management actions could include:

1. Inventorying likely sites prior to surface disturbance

2. Monitoring surface disturbance activities

3. Avoiding fossils when discovered

4. Salvaging fossils where avoidance was impractical

CHAPTER 3

CONTINUATION OF PRESENT MANAGEMENT (NO ACTION) ALTERNATIVE

The Continuation of Present Management Alternative proposes to continue the Bureau's existing management of the various resources on public lands in the Kremmling Resource Area. As this document is both the proposed resource management plan and environmental impact statement, the discussion of this alternative goes into considerable detail to describe existing management practices and demand and dependency, both locally and regionally, on the various public land resources. This information provides the baseline upon which the other alternatives were developed and against which they can be compared.

In this alternative the management and flow of outputs from the public lands and resources in the Kremmling Resource Area would continue at essentially their present levels, with the exception of wilderness. A recommendation on the suitability or nonsuitability of the Troublesome WSA for wilderness designation must be made in this plan. An indefinite continuation of interim management for the protection of wilderness values is not allowable under FLPMA.

MINERALS AND PALEONTOLOGY

Introduction

The management of public domain minerals is separated into three categories: leasable, locatable, and salable. Leasable minerals include such products as coal, oil, and gas. Leasing in areas that are known to contain oil and gas is accomplished through a competitive bidding system. Oil and gas leasing in areas that have an unknown potential are disposed of by noncompetitive sales. Coal leasing is handled by competitive sales.

Locatable minerals are those minerals that fall under the jurisdiction of the General Mining Law of 1872, as well as subsequent hardrock mining laws. These minerals include gold, silver, copper, molybdenum, uranium, and fluorspar. Locatable mineral areas may be staked and filed by a claimant. This procedure gives the claimant exclusive rights to the exploitation of the minerals within the claim boundaries. Management by BLM consists of recording the claims, as well as implementing the surface management regulations (Surface Management of Public Lands Under U.S. Mining Laws - FR 78902: 11/26/80). These regulations primarily provide for reclamation of surface disturbances of public lands following completion of the mining operation.

Salable minerals include common varieties of sand, stone, gravel, cinders, pumice, pumicite, and clay that may be acquired under the Materials Act of 1947, as amended. The primary salable minerals in the Kremmling Resource Area are sand and gravel used for road base and building construction.

The management of paleontologic (fossil) resources of scientific value on public lands is the responsibility of BLM. The present inventory consists only of a literature search. No areas have been identified for management of paleontologic resources.

Coal

The coal resources in the Kremmling Resource Area are located mostly in the North Park basin. Much of North Park has been designated by the U.S. Geological Survey (USGS) as a known recoverable coal resource area (KRCRA). This area is referred to as the McCallum KRCRA.

Four known minable coal zones are exposed in the McCallum area. They are all within the Coalmont Formation. These zones are the Sudduth and Capron Coal zones and two additional unnamed coal zones. Sudduth coal is now being strip-mined at the Marr, Canadian, and Flatiron mines. These mines are on the east flank of the South McCallum Anticline. The Sudduth coal bed ranges in thickness from 4 to 58 feet. The coal is sub-bituminous (Btu/16=8,520 to 11,280 as-received), low in sulfur content (0.2 to 0.3 percent), and variable in ash content (2.1 to 19.2 percent). The Capron coal ranges from lignite to sub-bituminous (Btu/16=4,500 to 10,669 as-received) (USDI/U.S. Geological Survey 1977).

The lands described as the McCallum KRCRA contain approximately 226,000 acres. Of the total KRCRA acreage, approximately 68,990 are surface acres managed by BLM, while 109,510 are mineral estate acreage under the Bureau's jurisdiction (see Table 3-1). Estimations derived from information contained in the USGS CRO/CDP (Coal Resource Occurrence/Coal Development Potential) reports indicates a coal reserve in the McCallum KRCRA of approximately 275 million short tons (90.7 surface/184.2 subsurface)(USGS 1979).

There are eight coal leases in the McCallum KRCRA which total approximately 5,200 acres. The three leases under development are located east of Walden. In addition to the existing leases, there is one Preference Right Lease Application (PRLA) for 440 acres near Coalmont. The PRLA is being proc-

TABLE 3-1 -- KREMMLING RESOURCE AREA LAND STATUS SUMMARY

(Known Recoverable Coal Resource Area)

Federal/Federal	68,990
Private/Federal	36,880
State/Federal	2,240
Arapaho National Forest/Federal	1,400
	109,510
Federal/Miscellaneous	2,120
	111,620
Total Known Recoverable Coal Resource Area	226,015
	116,610
Private/Private	114,395

essed through a separate Environmental Impact Statement.

The economic conditions for production of coal are less than ideal in the area. Even though the demand in the Midwest for western low-sulfur coal has increased steadily in recent years and the North Park Basin area has increased coal production, the production in this area accounts for only about 4 percent of the total production for the State of Colorado (Colorado Division of Mines files). The demand for coal is expected to experience a continued but moderate increase in the foreseeable future.

The Union Pacific Railroad, which extends between Walden and Laramie, is the primary mode of transportation for coal leaving Jackson County. The eastern mountain ranges prohibit easy access to eastern coal markets, requiring instead that coal be shipped north first before being shipped east.

There are three strip mines in operation in North Park: the Marr and Canadian on public lands and the Flatiron on private. Production at these mines has increased steadily since the initial operation in 1974 and is expected to stabilize at approximately 2 million tons per year, 39 percent above the 1979 production. This coal production accounts for approximately 66 percent of Jackson County mineral production income (USDI/U.S. Geological Survey 198l).

The Marr and Canadian mines employ approximately 114 persons. These workers and their families account for approximately 18 percent of the population of Jackson County (Colorado Division of Mines 1979).

Coal Unsuitability Criteria and Surface Owner Consultation

BLM is required to review Federal lands to determine which lands are unsuitable for all or certain stipulated methods of coal mining. Bureau procedures for assessing unsuitability are defined in the planning regulations (43 CFR 1601.6-6) and coal regulations (43 CFR 3461).

The 20 criteria addressing unsuitability for the surface mining of coal were applied to the McCallum KRCRA, including existing Federal coal leases. The complete assessment report is available in the Kremmling Resource Area Office.

A final decision on the application of unsuitability criteria will not be made on existing, nonproducing coal leases until the mine plan review stage. Only a preliminary application of the criteria has been made in this document for lands with existing leases. After applying the 20 unsuitability criteria, the Bureau found that 7,190 acres were unsuitable for surface mining (see Table 3-2).

TABLE 3-2 -- SUMMARY OF UNSUITABILITY

Criterion Number	Title	Exception Application	Acres Unsuitable
1	Federal Land Systems	No	1,200
2	Rights-of-Way	Yes	0
3	Buffer Zones	Yes	0
4	Wilderness	No	0
5	Scenic Federal Lands	No	0
6	Scientific Study Areas	No	0
7	Cultural Resources	No	0
8	Natural Areas	No	0
9	Federally Endangered Species.	No	1,990
10	State Endangered Species.	No	1,200
11	Eagle Nest Sites	No	440
12	Eagle Concentration Areas.	No	0
13	Falcon Nest Sites	No	280[1]
14	Migratory Birds	No	1,920[2]
15	State Resident Fish and Wildlife.	No	0
16	Floodplains	No	0
17	Municipal Watersheds	No	0
18	National Resource Waters.	No	0
19	Alluvial Valley Floors	No	2,280[4]
20	State Proposed Criteria.	No	0
	Surface Owner Consultation.	N/A	0
	Total Unsuitable Acres.		7,380[3]
	Unsuitable Acres as a % of Total Federal Lands in McCallum Coal Area.		6.7%

[1]120 acres of this Criterion were also included as part of the acreage in Criterion 11.
[2]Same acreages as the total of Criteria 10, 11, and 14, less 120 acres identified in footnote 1.
[3]Total acres with no duplication of acreages.
[4]Ten acres of this Criterion were also included as part of the acreage in Criterion 9.

	Number of Re-sponses	Percent of Re-sponses
Against Leasing	14	32[a]
In Favor of Leasing	30	68
Not A Qualified Surface Owner	8	N/A
	52	100

[a] This accounts for approximately 4,500 acres or roughly 10% of the KRCRA acreage.

Surface owners in the McCallum area were consulted for their preferences for or against surface mining on their lands where the Federal government holds the mineral estate.

The responses were as follows:

The responses indicating opposition to surface mining expressed varying concerns. Of most concern was the anticipated conflict between maintaining a viable livestock operation and allowing surface mining. Other concerns were expressed over water quality, maintenance of the natural setting, and other general environmental factors.

Those opposed to surface mining of federally owned coal were scattered throughout the coal area. No specific area, community, or logical mining unit contained a significant number of opposed landowners. Therefore, all suitable areas in the McCallum Coal Area would be considered for future surface coal mining. No areas would be considered unsuitable solely because of surface owner opposition. Prospective lessees would be required to obtain surface owners consent before a lease is issued for surface mining.

Oil and Gas

Oil and gas under Federal management are leasable minerals. When the commodity falls within a known geologic structure (KGS), it is disposed of by leasing through a competitive bidding system. Areas outside of KGSs are disposed of by noncompetitive leasing.

Interest in the North Park area as a potential oil producing basin remains high for several reasons: the frequent oil and gas shows, the presence of KGSs, and the presence of attractive potential reservoir sections of the Muddy, Dakota, Lakota, and Jurassic sandstones. It is estimated that between 80 and 90 percent of the Kremmling Resource Area is presently under oil and gas lease.

Several areas in Middle Park are considered prospectively valuable since they are underlain by potential source and reservoir rocks (USDI/U.S. Geological Survey 1981). Although several holes have been drilled (most are fairly shallow), to date no known discoveries have occurred. Further consideration in this RMP of oil and gas will concentrate on the five main known fields in the North Park basin. These five fields are:

1. North McCallum: Sections 7, 18, T9N, R78W; Sections 1-4, 9-14, T9N, R79W; Sections 33-35, T10N, R79W.

2. South McCallum: Sections 7, 8, 16-18, 20-22, 26-28, 34, 35, T9N, R78W; Sections 3, 10, T8N, R78W.

3. Canadian River: Sections 2, 3, 10, 121, T9N, R78W.

4. Battleship: Sections 22, 23, T10N, R79W.

5. Lone Pine: Section 28, T9N, R81W.

Table 3-3 shows production figures on these fields.

TABLE 3-3 -- OIL AND GAS FIELDS OF NORTH PARK

Field	No. of Prod. Wells	1979 Production		Cumulative Prod. to 1/1/80	
		Oil (BBLS)	Gas (MCF)	Oil (BBLS)	Gas (MCF)
Battleship	5	21,090	0	2,743,730	0
Canadian	8	3,002	175,078	440,111	6,53, 221
Lone Pine	12	90,010	32,328	1,275,173	444,101
McCallum	50	155,457	2,327,935	7,197,647	498,348,305
McCallum (South)	8	4,075	91,473	728,810	154,912,204
TOTALS	83	273,634	2,626,814	12,385,471	660,557,831

(State of Colorado 1979)

All five fields are anticlinal structures. The first four are located north and east of the Walden area. The Lone Pine Field is located approximately 12 miles due west of Walden.

Surface and mineral ownerships vary. The Canadian and Lone Pine Fields are, for the most part, privately owned. The remaining fields are predominantly public lands. Approximately 62 percent of the production is derived from public land.

As can be seen from Table 3-4, active production in the North Park area was reinitiated in the early 1970's and appeared to peak in the mid-1970's. Much of the gas production (CO_2) is presently being used for reinjection into oil wells for additional production. At present, no pipeline transportation exists for delivering out of the area. Since present fields are relatively small, production represents only about one percent of the statewide total. No transportation system for out-of-the-area use is anticipated in the near future.

TABLE 3-4 -- NORTH PARK: OIL AND GAS PRODUCTION

(Colorado Oil and Gas Conservation Commission - Various Years)

Year	Number Producing Wells	Oil (BBL)	Gas (MCF)	% Colorado Production	
				Oil	Gas
1974	64	493,984	4,871,849	1.3	3.3
1975	66	452,029	4,322,638	1.2	2.5
1976	68	389,476	4,058,356	1.0	2.2
1977	68	338,367	3,454,897	0.9	1.8
1978	.....	332,339	2,541,952	0.9	1.3
1979	92	301,686	2,669,237	0.9	1.4

Production of oil and gas can be expected to conflict with other minerals production within the five KGSs. Of particular interest are those areas which fall within the KRCRAs (see coal section). The primary areas of concern in the affected KGSs are:

1. North McCallum: Most of Sections 3, 4, 9-11, 13, 14, T9N, R79W; portions of Sections 1, 2, 12, T9N, R79W; Sections 33-35, T10N, R79W, Sections 7, 18, T9N, R78W.

2. South McCallum: Portions of Sections 7, 8, 16, 18, 20-22, 26, 28, 34, 35, T9N, R78W, Section 10, T8N, R78W.

3. Battleship: All of the KGS.

Uranium

Uranium found on public land is considered a locatable mineral and thus is subject to exploration under the General Mining Law of 1872. Management by BLM has consisted for the most part of recordation of the mining claims and issuance of rights-of-way for various drilling operations. The management of uranium resources is now subject to the Surface Management Regulations (43 CFR 3809), which provide for the management and reclamation of all lands subject to the General Mining Law.

No uranium is presently being produced from lands managed by BLM in the Kremmling Resource Area. Four or five exploration operations per year have been conducted in recent times. The source of uranium in the Kremmling Resource Area is the Morrison and Troublesome Formations found in the Middle Park basin (Malan 1957). With exploration still incomplete, the total value and area of the resource is unknown. In addition, the demand for uranium products is at a low point. Therefore, even though exploration continues, these operations are speculative and future demand is uncertain.

Other Mineral Values

Molybdenum

No molybdenum is being mined in the Kremmling Resource Area. However, the Henderson Mine's milling operations are found in the southwestern area of Middle Park. This product accounts for over 80 percent of the mineral economic values in the resource area. Production at the Henderson Mine (Clear Creek County) has dramatically increased in recent years. Productive capacity at the mine increased from 8,000 tons per day in 1978 to 24,000 tons per day in 1979. An eventual goal of 35,000 tons per day by 1983 is anticipated (USDI/Bureau of Mines 1979).

As of 1979, approximately 592 persons were employed at the Henderson Mill (Colorado Division of Mines 1979). This figure includes approximately 100 construction workers. A total of 284 Henderson operation (mine and mill) employees reside in the Grand County area (personal communication). These workers and their families account for approximately 4 percent of the population of Grand County. Because of its location and the fact that this mineral is a locatable mineral subject to the mining laws, it is not a manageable mineral for BLM.

Fluorspar

Intermittent mining and production of fluorspar minerals has occurred in the Northgate area of North Park. However, no production from this area has been recorded since 1973. At that time, production was valued at $3.8 million (Colorado Division of Mines 1973).

Pearl District Area

Northwest of Northgate on State Route 125 is Independence Mountain, a haven for hobby prospectors because placer gold deposits are found among the many Precambrian rocks. At present there are an estimated 350 claims in and around Independence Mountain. There are a few mines in the vicinity of Pearl (copper deposit) which appear promising. However, these deposits have not generated a great deal of interest from the mineral industry. The majority of interest in this area is from hobby prospectors.

Mineral Materials

Mineral materials include sand and gravel, limestone, and building stone. Of primary importance are sand and gravel. The best sources of sand and gravel are found along primary rivers and streams, such as the Colorado River and Troublesome Creek (Middle Park) and the North Platte, Michigan, Illinois, and Canadian Rivers and Arapahoe Creek (North Park). Presently, sufficient quantities exist and are being disposed of to meet present as well as foreseeable future demands.

The local demand has risen 7 percent annually over the past 10 years. This modest growth is expected to continue. The removal of mineral materials has little or no social impact.

The major portion (87 percent) of total sales for the resource area occur as private sales in the Grand County area (Colorado Division of Mines 1979). Production from public lands in Jackson and Grand Counties accounts for just under 12 percent of the counties total sand and gravel sales.

The demand for sand and gravel from public lands is almost exclusively for free-use by state and local highway and road departments. The free-use demand by state and local governments is much higher in North Park (Jackson County) area than in Middle Park. Table 3-5 shows production and disposal figures for Jackson and Grand Counties from 1976 through 1979.

TABLE 3-5 -- BLM - SAND AND GRAVEL DISPOSAL [1]

Year	Production (yd^3)	County	
		Jackson	Grand
1976	125,600	125,000	600
1977	129,000	129,000	0
1978	23,300	0	23,300
1979	150,000	150,000	0

[1]USDI - Bureau of Land Management - files

Paleontologic Resources

The management of paleontologic resources has only recently become a focus for BLM. The manageable paleontologic values in the Kremmling Resource Area consist predominantly of dinosaur specimens in the Morrison and Troublesome Formations and marine invertebrates such as ammonites in the Pierre Shale.

Until recently, BLM has done little to preserve local fossil finds. However, recent public interest has arisen over protecting significant fossil locations. A literature search was conducted in 1980 to identify rock units having potential paleontologic value. A classification system for paleontologic values has recently been developed for use in BLM management.

An overlay identifying all rock formations and the classification rating may be examined in the Kremmling Resource Area Office. Presently, only one fossil location has been field inventoried for identification and posting as a fossil site, the Cretaceous Ammonite site approximately 7 miles north of Kremmling.

Demand and Dependency

Economic demand and dependency has been discussed previously in this section as it pertains to each resource (coal, oil and gas, etc.). In North Park, public attitudes generally favor regulated, orderly mineral development. To the extent that mineral exploitation removes range acreage from livestock use and mining attracts a work force culturally different and/or transient, adjustments to social structure and interaction patterns occur and conflicts arise.

Troublesome Wilderness Study Area

Leasable Minerals

Evidence of coal resources in the Troublesome Wilderness Study Area (WSA) were not found because the majority of the tract is underlain with volcanic rocks (mostly tuffaceous) of late Tertiary age. Beneath this, the structure and character is that of the Middle Park Formation, a strata largely equivalent to the Coalmont Formation of North Park. The only known evidence of coal to have occurred anywhere near the area is in Sections 4 and 5 of T3N, R80W, known as the Hartman Coal Mine. The mine, which extracted coal from the Middle Park Formation, operated between 1931 to 1935. It was then abandoned due to a lack of funds and the presence of soft shale, which caused unfavorable roof conditions.

Several areas considered prospectively valuable for oil and gas are located in Middle Park. No actual discoveries have been reported. Other leasable minerals are not known to exist within the Troublesome WSA.

Locatable Minerals

The WSA has no reported radioactive occurrences, although there have been occurrences north of Sheep Mountain. Some uranium ore production has come from the Hot Sulphur Springs Area (State of Colorado 1960). Favorable indications for possible economic uranium occurrences exist in the Dakota Sandstone and Middle Park Formations. No other locatable minerals are known to exist in this area or in association with equivalent geologic formations found in the area.

Salable Minerals

Primary rivers and streams are the best source for recovering sand and gravel. Troublesome Creek is one area in the WSA where sand and gravel could be recovered, but it is isolated from areas where the need exists. More readily accessible areas are available.

WATER RESOURCES

Present Management

The present management of water resources in the Kremmling Resource Area is limited to maintaining water quality at existing levels. For the most part, this consists of applying stipulations to activities on public lands which might pollute or lower water quality.

Some assistance is given to other resource activities in feasibility studies and project design for the development of water facilities. Management also requires an analysis of impacts on major Federal actions potentially affecting the water resource.

Surface Water

The current program is primarily an inventory of surface waters, which has included a baseline study of water quality on public lands. Information is available from the U.S. Geological Survey or at the Kremmling Resource Area Office. Flow data has been gathered as a part of the baseline inventory.

A stream channel stability form developed by the U.S. Forest Service was used to measure the hydrologic stability of perennial stream channels.

Table 3-6 shows the miles of stream in each of the four ratings. An excellent rating means that a stream channel would change very little after a flood. A flood would have a significant impact on a stream with a poor rating.

TABLE 3-6 -- STREAM CHANNEL STABILITY RATINGS[1]

	Miles	Percent of Total
Excellent	0	0
Good	67	45
Fair	62.4	42
Poor	20.6	13

[1]Data on specific streams is on file in the Kremmling Resource Area Office

Monitoring of developed springs consists primarily of checking condition and maintenance needs at least once every five years. The undeveloped springs on public land were inventoried in 1980; a summary of the information gathered is available at the Kremmling Resource Area Office.

Groundwater

Groundwater resources are protected by mitigations for actions that would affect them. The primary impact comes from coal mining in North Park. Groundwater has been developed and is used by the range and wildlife programs as water sources.

Water Rights

The Bureau has filed applications for numerous water sources in North Park and Middle Park. Reserved water right claims for 82 springs in North Park and 51 springs in Middle Park were filed as part of the general state adjudication of 1972. In addition, application for 13 wells was made by the Bureau as a part of that adjudication. Since 1972, many new springs have been identified, and other new water sources have been developed. In accordance with state law, the Bureau has filed for reserved rights for springs and for appropriation water rights for wells between 1972 and 1982.

Public water reserves are springs and water holes that were reserved by the U.S. Government by executive order in 1926 for livestock water and water supplies. The purpose was to prevent anyone from monopolizing large tracts of arid grazing land by controlling water sources. The Bureau is trying to obtain appropriative rights on these water sources.

Water Management Regulations

There are several regulations that affect water management. At the local level, the Northwest Colorado Council of Governments has completed their 208 Water Management Plan. This could man-

date some water quality controls for the public lands but the plan is presently under a court injunction. The state of Colorado has classified the state's waters and set standards. Bureau management practices may not degrade water quality below these standards. By adhering to the State's standards, the Bureau would also meet the requirements of the Federal Water Pollution Control Act, the Colorado River Basin Salinity Control Act, and the Clean Water Act.

Demand and Dependency

There are two conflicting demands on the surface water resources in Middle Park. Local demand for irrigation and domestic water competes with municipal and agricultural interests on the eastern slope of the Rockies. Approximately 40 percent of the total surface runoff that originates above State Bridge is diverted to the Eastern Slope. As energy development continues to grow, western Colorado will demand more of this water supply.

Both east and west slope interests depend on the Colorado River basin. The Middle Park ranching community depends completely on this water for hay production. Expanding recreational and residential developments in the east end of Grand County depend on it for domestic use. In the same way, increasing populations on the East Slope create ever increasing demands for domestic water supplies. Agricultural water interests on the Eastern Slope are accorded a lower priority than municipal needs.

Water demand in North Park centers on ranching. There are very few transbasin diversions from the North Platte watershed and conflicts between North Park and Eastern Plains cities are not as pronounced as in Middle Park. However, North Park's ranching community is dependent on the North Platte drainage for its continued existence.

The social values associated with water resources in the Kremmling Resource Area involve retaining the natural beauty and purity of the region while continuing the present recreational and ranching uses of water. Any management decision that would threaten the quality of the area, including water quality, would almost certainly meet opposition.

Troublesome Wilderness Study Area (WSA)

There are five perennial streams in the Troublesome WSA. All five streams have excellent water quality, as there has been little disturbance in the upper watershed. Two ditches divert water from Rabbit Ears and Troublesome Creeks for hay meadow irrigation. There is currently no specific management of these streams. The demand for water from the Troublesome WSA is confined to adjacent landowners' need for irrigation water. These landowners depend on getting good quality water from the Troublesome drainage for hay meadow irrigation.

LIVESTOCK GRAZING

General Description

Livestock grazing has been an important use of the public lands in the Kremmling Resource Area since the introduction of domestic livestock in the 1870s (see Figure 3-2).

Presently, the resource area supports a domestic livestock grazing program on 356,260 acres, or 93 percent of the public lands within the resource area. Currently, these public ranges are licensed at a level of 45,648 animal unit months (AUMs) of forage.

The majority of the permitted public lands (95 percent) are grazed by cattle, which use 99 percent of the AUMs available. Sheep and horse grazing account for only one percent of the total authorized use and occur on only 5 percent of the public lands.

There are no known wild horses or burros within the resource area.

Current Management

Grazing Allotments

There are 162 term permits/leases on 311 allotments within the resource area. Seven of these allotments are common use areas, while the remainder are licensed for individual operator use.

At present, four allotments are intensively managed under allotment management plans (AMPs) that cover approximately four percent of the public lands (14,120 acres) and account for six percent of the total AUMs.

The remaining 307 allotments are less intensively managed and are licensed in accordance with the constraints of individual term permits/leases. The AUMs authorized on the term permits and leases were determined largely through a livestock forage production inventory conducted in 1953.

The outdated nature of this inventory makes its value questionable for present use. However, during the summer of 1980, an extensive range condition inventory was conducted to provide spe-

Figure 3 - 1. Marr Coal Mine in North Park

Figure 3 - 2. Livestock in Middle Park

cific data on the condition, annual production, and availability of forage found within the resource area.

In addition, a comprehensive monitoring program was initiated in 1981. The monitoring studies include actual use, utilization, and climate data and are conducted on a annual basis. The data collected is used to check, refine, and supplement the range condition inventory data.

Initial livestock forage allocations in all the alternatives, except this one, were based on data collected in the forementioned inventory and monitoring studies. These allocations are displayed in Appendix 3. The initial allocation in this alternative will be 45,648 AUMs which is the same as the current permitted use. As shown in Appendix 3 some allotments will be over allocated in this alternative.

A grazing administration map depicting the location of allotments and a listing of permittees and lessees has been prepared, and is available for review at the Kremmling Resource Area Office. Additionally, Appendix 2 displays the current authorized use for each allotment.

Season of Use

The majority of public lands are licensed for grazing use during various periods between May and October. This use, particularly in the spring, was established primarily to accommodate the needs of livestock operations. Spring use occurs on the lower benches and terraces and is designed to coincide with the end of calving. All calving is done on private hay meadows, and the cows are removed from the meadows to the public lands shortly after calving has ended. This allows ranchers to begin early flood irrigation to raise hay for winter feeding.

This current cycle of continual spring use of public ranges has afforded the ranchers a convenient place to pasture their cows during the irrigation season. However, this type of use on a continual basis has contributed to a loss in the vigor and reproductive capability of some key forage plants.

Range Forage Condition

During the 1980 field season, forage condition was evaluated on 225 out of the 311 of the grazing allotments in the resource area. Eighty-six grazing allotments were not inventoried because they consist primarily of small, scattered tracts of public land. Table 3-7 presents a summary of the forage condition readings for the allotments and total acres inventoried.

As shown in Table 3-7, approximately 17 percent of the allotments inventoried are in satisfactory condition. The satisfactory condition of these allotments may be largely attributed to either proper stocking rates, adjusted seasons of use that allow for periodic or continuous spring rest, or both of the factors combined.

TABLE 3-7 -- RANGE FORAGE CONDITION

	Range Forage Condition[1]	
	Satisfactory	Unsatisfactory
No. of Allotments	37	188
Percent of Allotments	17%	83%
Acres	70,339	233,196
Percent of Acres	23%	77%

Note: 86 allotments, or 52,725 acres, were not inventoried.
[1]Range Forage Condition is based on the amount of forage (lbs/acre) presently produced on an allotment in relation to its potential forage production (lbs/acre). -- Unsatisfactory indicates currently less than 75% of potential; satisfactory indicates currently greater than 75% of potential.

In contrast, approximately 83 percent of the allotments inventoried are in unsatisfactory condition. The unsatisfactory condition of these allotments is the result of overstocking, lack of spring rest, or lack of management facilities such as adequate stock waters or crossfencing. The condition of these allotments is expected to decrease even further under present management. Estimated long-term forage allocation for livestock would be 40,817 AUMs, which is an eleven percent decrease from current authorized levels.

Range Ecological Condition

In addition to range forage condition, the ecological condition of the inventoried grazing allotments was determined. Ecological range condition is not based solely on forage production, but is an ecological rating of the plant community. It is the present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site. Furthermore, it is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the climax community. As specified in the SCS National Range Handbook, ecological range condition classes are structured as follows:

Range Condition Class	Percent of Present Plant Community That is Climax for the Range Site
Excellent	76-100
Good	51-75
Fair	26-50
Poor	0-25

Based on the above rating system the ecological condition of the 225 allotments that were surveyed in 1980 is displayed in Appendix 2. The summary of this information is presented below.

TABLE 3-8 -- RANGE ECOLOGICAL CONDITION

Excel-	lent	Good	Fair	Poor	Unclassi-fied
Acres	673	68,575	170,749	63,538	52,725
% of Acres	>1%	19%	48%	18%	14%

The 1980 range condition inventory indicates that although the majority of range lands in the Kremmling Resource Area are in fair or better ecological condition (approx. 68 percent), the majority (77 percent) are in unsatisfactory range forage condition. Because of the need to emphasize management in the improvement of range forage condition as opposed to range ecological condition, the range forage condition classification system (unsatisfactory and satisfactory) was used when categorizing allotments under the various management levels previously discussed.

Distribution and Range Utilization

As a general rule, livestock distribution and utilization patterns may be directly correlated to the availability of water and existing topography. On nearly all allotments within the area, heaviest grazing occurs on gentle terrain with good access to water. In contrast, steep terrain and areas farther than one mile from water are less frequently used by livestock. Therefore, uniform grazing of an allotment depends on the ease of cattle movement over the land and uniform distribution of water.

Grazing patterns in the resource area indicate that the lower benches and terraces yield the most uniform grazing patterns due to their flat or gently rolling topography and generally well distributed water points. However, some problems occur even on these ranges. Heavy livestock grazing occurs along streams and intermittent riparian drainages. Livestock congregate in these areas of lush vegetation and plentiful water and tend to exhaust them, leaving the rest of the allotment undergrazed even though other stock water may be available.

In the higher elevation allotments, livestock are generally confined to narrow draws or mountain meadows because of the inaccessability of steep slopes and dense forests.

Range Improvements

Water Developments

Water quality and quantity in the Kremmling Resource Area are generally adequate. However, in some areas, distribution is unsatisfactory. Streams, creeks, and springs provide ample water for livestock along their courses, and groundwater supplies appear to be adequate where tapped. Allotments that do not contain year-round surface water flows depend upon reservoirs and wells to supply livestock with water. Those allotments that are totally dependent on reservoir sites are often inadequately watered because they rely heavily on snow melt in the spring, with livestock having to be removed as the water supply dwindles. This limits the time during which these areas are suitable for grazing.

Current management of water development is geared to maintaining existing springs and wells and constructing pipelines to adjacent ranges. These pipelines provide a reliable source of water throughout the grazing season as well as enhancing livestock distribution.

Vegetation Manipulations

Vegetation manipulations have consisted primarily of a combination of brush beatings, plowings, sprayings, and seedings. The majority of the brush control projects were performed in the 1960s and have met with varying degrees of success. Many of the projects still in existence have no available comparison data to determine success. In such cases, personal observation indicates increased forage production, which is the general objective of the projects.

Vegetation manipulations have not been used in recent years within the Kremmling Resource Area. However, they are considered to be a viable and important management tool.

Fencing

The majority of fences in the resource area were constructed in the 1950's and 60's to establish permanent allotment boundaries. As a result, most allotments have adequate perimeter fences. However, some boundary fences are still needed, particularly in the higher elevation forested allotments.

Although fencing around the perimeter of an allotment warrants first priority, subsequent interior fencing is generally needed to enhance range production efficiency. Interior fencing has been infrequent and limited predominantly to allotments managed under AMPs.

Existing management has been geared toward maintenance of existing fences, with very little new fence construction due to budget and policy constraints. Fencing practices are considered to be a very important to any range management program.

A comprehensive listing of the location and type of all range improvement projects found within the resource area has been compiled and is available at the Kremmling Resource Area Office.

Current Land Use Conflicts

There are a number of land uses that are currently having an impact on available livestock forage. Among the most prominent are mineral exploration and development programs, primarily in North Park. Presently, grazing allotments are being impacted by the McCallum oil field and two active coal strip mines.

Energy exploration (particularly for oil and gas and uranium) is affecting the range resource to a lesser degree over the short term. However, long-term cumulative losses in forage production are evident, particularly due to new road construction and drill pad preparation.

In addition to energy development, other land uses, such as off-road vehicle use and transmission line construction activities, continue to reduce livestock forage. Off-road vehicle use, which produces long-term effects, is heaviest in those grazing allotments within a 10-mile radius of the towns of Kremmling and Walden. The RCA Allotment north of Kremmling has been significantly impacted by off-road vehicles.

Major right-of-way projects such as transmission lines and water diversion pipelines are expected to reduce range forage for a relatively short time (three to four years) until reclamation is completed.

Other Land Use Plans

Currently, there are no other land use plans that specifically deal with the livestock grazing program on BLM administered lands within the Kremmling Resource Area. There is a need to develop interagency cooperative agreements with other Federal and state agencies, particularly as activity plans are prepared. Agreements could be formed to collectively accomplish range management objectives on a significant number of allotments.

Demand and Dependency

The main agricultural product of the Kremmling Resource Area is livestock. Eighty percent of the agricultural receipts come from this source, while the remaining 20 percent come from hay. As shown in Table 3-9, hay is apparently being sold as a cash crop more often than in the past. Sales receipts from livestock have increased 13 percent annually since 1974, despite reduced inventories. Inflation and sales generated from the reduction of herds probably account for this increase.

TABLE 3-9 -- KREMMLING RESOURCE AREA AGRICULTURE TRENDS

	No. of Years	Annual Percentage Growth		
		Production	Value per Ton	Marketed Earnings
Hay				
Resource Area[2]	6	−2	0	6
Colorado[3]	6	1	2	5
United States[3]	3	3	0	4
Livestock and Products	.....	Inventory Cattle	Inventory Sheep	Total Earnings
Resource Area [1,2]	10	−2	−6	13
Colorado [1,2]	10	−2	−6	14
United States	6	.....	.....	7
	.....	.....	**1978**	**1979**
Resource Area agricultural exports (000)[4]	.....	.....	$5,953	$7,487

[1]Various years *Colorado Agricultural Statistics*, Denver: Colorado Department of Agriculture, Colorado Crop and Livestock Reporting Service.
[2]Various years *Regional Economic Information System*, Washington: U.S. Department of Commerce, Bureau of Economic Analysis.
[3]Data files from the U.S. Departmentof Agriculture, Crop and Livestock Reporting Service, Denver, Colorado.
[4]Input-output economics model, Colorado State University, Fort Collins, Colorado.

These figures are consistent with statewide figures for the same period and greater than those for the nation as a whole. Cattle inventories have dropped an average of two percent every year for the period of 1971 to 1980, and sheep inventories have dropped an average of six percent. According to an input-output economics model developed by Colorado State University, $7,437,000 of agricultural products were exported in 1979. There were about 220 people employed in agriculture in the area in 1979 (BEA various years).

As seen in Table 3-10, 75 percent of BLM operators use the public lands for ten percent or less of the forage required by their range operation. This in itself would indicate a very low dependency on BLM forage by most of the operators. However, since most of the operations require this forage at a critical time of the year, i.e., the spring, 74 percent of the operators are critically or substantially dependent upon BLM permits (Table 3-11). Spring forage is at a premium because ranchers must start irrigating their private meadows for winter hay

supply and get young calves to drier, more open range early to reduce the chance of disease. Since U.S. Forest Service land is usually not available for grazing until late spring or summer, most of the land needed for spring grazing is administered by BLM.

TABLE 3-10 -- PERCENT OF GRAZING OBTAINED FROM BLM LANDS BY OPERATORS HOLDING BLM PERMITS[1]

Percent of Forage Obtained from BLM	Percent of Operators	No. of Operators
0-10	175%	109
11-20	16%	23
21-30	6%	9
31-40	3%	4
41-50	0%	0
51-60	0%	0
61-70	0%	0
71-80	0%	0
81-90	0%	0
91-100	0%	0
TOTAL	100%	145[1]

NOTE: The number of operators is different than the number of permits and leases. One operator may have several permits or leases.

[1]BLM data and estimates, U.S. Department of Interior, Bureau of Land Management, Kremmling, Colorado.

TABLE 3-11 -- DEPENDENCE ON BLM GRAZING PERMITS/LEASES[1,3]

Dependence[2,3]	No. of Operators	Percent of Total
Critical	44	30
Substantial	64	44
Low	37	26
TOTAL	145	100%

[1]BLM data and estimate, U.S. Department of Interior, Bureau of Land Management, Kremmling, Colorado

[2]*Critical* means that BLM forage is judged to be an essential element for the survival of the ranching operation.

Substantial means that BLM forage use may or may not be an essential survival element.

Low means that BLM forage use is judged not to be essential to the survival of the ranching operation.

[3]In developing this table, the following three criteria were used:

1. Proportion of forage acquired on public land
2. Season that forage is acquired
3. Size of operation and thus ease of acquiring alternate sources of forage.

Each allotment was then given a numerical rating based on the sum of points given from each criterion. The higher the number of points given from that criterion, the more critical that criterion was to the operator. Criterion Number 1 was given the heaviest emphasis. A range of points was then used to classify each operator at high, low, or medium in his criticality of dependecy. After this classification, each operator's record was looked at again to see if some factor not considered in the rating system could change the operator's classification. For more information on how this table was developed, consult the Kremmling Resource Area Office.

Twenty percent of the cattle produced in the resource area are produced on ranches that are critically dependent on BLM. Thirty-five percent are produced on ranches that are substantially dependent.

In terms of economic trend, ranch units have undergone changes in their number, size, and dependency on BLM forage. The number of ranches has increased in Grand and Jackson Counties (these contain most of the public lands in the area) since 1974, but their size has decreased, along with the total amount of land used for ranching (Table 3-12). At the same time, the number of BLM permits and leases has remained fairly constant at around 162 (BLM 1981). This probably means that smaller operations are holding grazing permits and leases.

TABLE 3-12 -- KREMMLING AGRICULTURE CENSUS FIGURES[1]

Unit	1964	1967	1974	1978
No. of Ranches (Acres)				
Grand County	125[2]	115[2]	128	135
Jackson County	78[2]	82[2]	92	103
Land in Ranches (Acres)				
Grand County	301,195[2]	341,703[2]	305,976	314,764
Jackson County	341,700[2]	296,300[2]	470,485	437,829
Avg. Size of Ranches (Acres)				
Grand County	2,410	2,971	2,390	2,332
Jackson County	4,381	3,613	5,114	4,251

[1]Various years *Census of Agriculture*, Washington: U.S. Department of Commerce, Bureau of Census figures.

[2]Original figures adjusted to account for change of definition of form, based on ratio computed from 1974 appendix of 1978 ag. census figures.

All other dependency criteria being equal, a smaller ranch operation will usually be more dependent on its BLM permit or lease than a larger one because it has less flexibility in acquiring alternate forage. Because of this, some of the ranchers holding BLM permits in the Kremmling Resource Area are probably more dependent on the BLM for their ranch operation than they were 10 years ago. Another indication that ranches are more dependent on BLM grazing is the fact that the percentage of forage provided by BLM lands has risen from 4.6 to 5.3 percent, as shown in Table 3-13.

There is a high demand for BLM grazing permits or leases. The annual cost per AUM that BLM charges is considerably less than the fair market value for western rangelands ($8.85 per AUM USDA 1983). This does not mean that some permittees do not have more invested in their BLM permits than the annual charge per AUM, especially

TABLE 3-13 -- KREMMLING RESOURCE AREA LIVESTOCK AND AUM NUMBERS

	1971 Total	1980 Total
Cattle [1]	76,000	68,000
Sheep [1]	5,100	2,700
Horses [2]	1,500	1,500
Area AUMs [2]	991,200	886,400
BLM AUMs [2]	46,059	45,648
BLM AUMs as a percentage of Area AUMs	4.6%	5.3%

[1]Colorado Crop and Livestock Reporting Service, various years, Colorado Agricultural Statistics, Denver: Colorado Department of Agriculture.
[2]BLM, 1981. Reference data on file with the Kremmling Resource Area Office of the Bureau of Land Management at Kremmling, Colorado.

if one considers mortgage costs (due to the value that BLM permits add to private land and the collateral they provide for bank loans) and maintenance costs not assumed by BLM. However, it does mean that BLM would probably have little trouble in finding people to lease its grazing privileges at this rate.

There is also a social and cultural significance to ranching. North Park and western Middle Park are sparsely populated and agriculturally oriented. The major communities, Kremmling and Walden, are small. Many of the people have had ranching in their families for generations. Many townspeople come from ranches or have been around ranching all their lives. For the people in the Kremmling Resource Area, ranching is not just an industry but a way of life. One of the biggest social events of the year is the rodeo.

In some cases, small ranch owners work in town in order to supplement ranch incomes or even to support unprofitable ranch activities because they want to maintain their connection with ranching. Large ranch cooperatives have bought out some of the family-owned operations, keeping former owners on as employees. Yet people continue to live on ranches that may not be economically viable, or continue to work on ranches that have been sold to large corporations, because they want to maintain a country or ranching identity.

Forest Products

Current Management

The majority of public land at the higher elevations (over 8,000 feet) is forested. One notable exception is the pinyon pine/juniper forests at the lower elevations (6,800-8,000 feet) that surround the lower Colorado River.

Forest lands under intensive management in North Park are the large parcels on Independence Mountain, Bull Mountain, Owl Mountain, Green Ridge, and Buffalo Peak. In Middle Park, the main areas are Strawberry, Reed Creek, Dice Hill, and the area north of U.S. Highway 40 between Troublesome Creek and Colorado Highway 125. The fact that these areas are under intensive management does not mean, however, that a management practice will be conducted on every stand every year. In fact, some stands may not experience any type of management practice for 20 to 40 years, or perhaps even longer.

The existing level of management was determined by the intended allowable cut for the Glenwood Springs Sustained Yield Unit (SYU) in 1977. The SYU includes all of the Craig District plus most of the Grand Junction District. The allowable cut was found by using the 10-point inventory system, so named because there were 10-points to each field plot. The inventory was done from 1971 to 1973.

The forested acreage was divided into different strata by analyzing aerial photographs and then assigning an adequate number of field plots to each stratum to assure statistical accuracy. District boundaries changed after the inventory was made. The total allowable cut for the SYU was proportioned between the two districts based on the location and productivity of the field plots. The number of plots and acreage in each stratum for the Craig District are shown in Table 3-14.

The sustained yield cut for the district, based solely on the manageable forest acreage, is 51.0 million board feet (MMBF) per decade, or 5.1 MMBF per year. Since the resource area has the bulk of the productive forest land, an arbitrary cut fluctuating between 3.7 MMBF and 5.0 MMBF, with the average being 4.5 MMBF per year, was assumed.

The criteria used in the computer model for the cut were:

1. Only data from nonrestricted manageable forest lands plots was to be used.

2. Areas were to be stocked within five years after final harvest.

3. Final harvests would not be made in stands less than 90 years old.

4. A combination of clear cuts and partial cuts were to be used. (The mistletoe and wind throw problems associated with partial cuts were not considered.)

TABLE 3-14 -- FOREST ACREAGE FOR CRAIG DISTRICT FROM 1977 ALLOWABLE CUT INVENTORY

Forest Strata	Number of Plots	Acres[1]
Non-restricted manageable forest	32	40,093
WITHDRAWN LANDS[5]		
Non-commercial Species (sub-Alpine Fir & Aspen)	10	12,754[2]
Slopes over 36%[6]	25	31,635
Multiple-use consideration[3]	5	6,248
Low Site[4]	4	5,019
Withdrawn Subtotal	44	55,656[2]
TOTAL Timber Production Base	76	95,749[2]

[1]Each plot represented approximately 1,200 acres.
[2]Pinyon/juniper is not represented since there were not any plots.
[3]Stream buffers and potential natural areas.
[4]Not capable of producing 20 cubic feet of commercial wood per acre per year.
[5]No forest management is planned for withdrawn lands except such custodial practices as fire protection and salvage.
[6]Current "ongoing" inventories use soil erosion, not percent slope, as the determining factor for restricting or withdrawing forest lands.

TABLE 3-15 -- FOREST LAND ACREAGE

Tree Species	Acres[1]		
	North Park	Middle Park	Total
Lodgepole Pine	23,025	39,945	62,970
Ponderosa Pine	320	0	320
Spruce/Fir	777	1,898	2,675
Douglas Fir	837	7,119	7,956
Pinyon/Juniper	0	9,965	9,965
Aspen	8,511	6,979	15,540
TOTAL FOREST ACRES	33,470	65,906	99,376

[1]Acres come from a combination of aerial photograph interpretation and "on-the-ground" inventories.

5. Precommercial thinning of 85 percent of future clear cuts and 55 percent of future partial cut stands was to occur as they entered the 20-year age class. These same stands were to be commercially thinned as they became 50 and 80 years of age.

A major problem with the 1977 inventory is that no consideration was given to the physical or economic manageability of various stands. For example, even if a plot was taken in a 30-acre marginal lodgepole pine stand on flat ground surrounded by a 2,000-foot vertical cliff that would prevent any access, the computer model still considered it a manageable forest stratum. Other problems are that the inventory did not include all of the forested land and that a significant portion of the forested lands are in the wrong stratum. As a consequence the total forest acreage and the amount in each stratum are incorrect.

The operations inventory and timber production capability classification studies presently underway will give accurate acreage for new strata. The operations inventory will show the location, acreage, condition, volume, and silvicultural need for each forest island. The classification studies will partition land into major classes that indicate their suitability for sustained timber yields.

After combining land use plan decisions and new inventory information from the two sustained yield unit districts, the Bureau will announce a new allowable cut in 1987. Table 3-15 shows the approximate forest acreage for the resource area, which is about the same as the 1977 inventory acreage for the entire Craig District shown in Table 3-14. Based on rough estimates of other inventories, about 50,000 acres meet the current 1977 inventory manageability criteria. However, approximately 10,000 acres of this would not meet new criteria because they are composed of a multitude of economically inaccessible, marginal forest stands scattered throughout the resource area.

Prior to 1971, most of the harvesting in North Park was on Bull and Independence Mountains, while more recent harvesting has been on Buffalo Peak. The old harvests in Middle Park were very scattered. The most recent harvest activities are a result of the Beetle Abatement and Management Project established in 1973 to control the mountain pine beetle epidemic in the eastern portion of Middle Park. Approximately 19 million board feet of timber were salvaged during the project.

A variety of harvesting techniques has been used in the resource area. They range from total clearcuts to many forms of partial cuts. The vast majority of forest stand manipulations have been in lodgepole pine, although some Douglas fir, Englemann spruce, and subalpine fir have been removed. Total clearcut has shown the best reforestation results.

In early partial cuts (prior to 1965), the best trees were removed, while poorly formed or diseased trees were left. This created an understory infected by the diseased overstory, as well as a situation where it was uneconomical to harvest the remaining extremely poor quality trees. More recent partial cuts have been better designed and have produced better results. Table 3-16 shows the volume and acreage of forest harvesting since 1953.

Harvesting is often the first intensive forest management practice, since this practice converts an overmature stand to a young, healthy stand. Clearcutting is the most common practice in overmature

TABLE 3-16 -- VOLUME AND ACRES OF TIMBER HARVESTING FROM 1953-1980

Year	Product	North Park		Middle Park		Total	
		Volume (MMBE)	Acres [1]	Volume (MMBE)	Acres	Volume	Acres
1953-1976	Sawlogs	27.6[2]	6,100[3]	28.7	5,80 0	56.3	11,900
1953-1976	Posts	2.9	800	.7	200	3.6	1,000
1977-1980	Sawlogs	2.6	400	12.5	2,000	15.1	2,400
1977-1980	Posts	.9	200	0	0	.9	200
GRAND TOTALS		34.0	7,500	41.9	8,000	75.9	15,500

[1]MMBF - 1,000,000 board feet
[2]Rounded to the nearest 100,000 board feet.
[3]Rounded to the nearest 100 acres.

and mature lodgepole pine stands for the following reasons:

1. It is most similar to Nature's way of regenerating a new stand by wildfire.

2. Dwarf mistletoe, prevalent in most stands, precludes reproduction under the infected overstory remaining from partial cut systems.

3. Hard spring winds tend to blow over residual lodgepole pines after partial cutting; this occurs because lodgepole is a shallow rooted tree.

4. Lodgepole pine grows best in full sunlight.

Figure 3-3 shows a typical clearcut in the resource area.

Partial cutting is the normal practice in the few spruce and fir areas because regeneration is best with some shade present.

Other intensive management activities besides harvesting are used within the resource area. These include:

I. Artificial regeneration, which is the restocking of a harvested area by either hand planting or seeding when natural regeneration is not expected to completely revegetate the area within five years.

2. Stand conversion, which is the practice of changing an existing noncommercial stand composition to a commercial type. This practice is generally not economical unless the area is a high yield site.

3. Stand improvement, which prepares the site for reforesting; if a stand is already adequately stocked, growth or quality can be improved through pruning, fertilizing, removing diseased trees, etc.

4. Precommercial thinning, which is used to increase growth on desirable trees by "weeding out" the undesirable. A stand is usually not thinning until it is 20 years old.

5. Commercial thinning, which serves the same purpose as precommercial thinning. This practice occurs when trees are older (40 to 80 years) and are a commercial product. It includes practices such as pole and post harvesting. Table 3-17 shows acreage of forest development practices.

TABLE 3-17 -- FOREST DEVELOPMENT ACTIVITIES 1977-1980

Activity	Acres
Artificial Regeneration	787
Stand Conversion	14
Stand Improvement	371
Pre-commercial Thinning	288
Commercial Thinning	240
TOTAL	1,700

Troublesome Wilderness Study Area (WSA)

The timber type in the Troublesome WSA is mostly lodgepole pine, with some scattered islands of pure aspen. The classification of forest acreage in the Troublesome WSA is shown in Table 3-18. The manageable forest acreage is scheduled for intensive management. The remainder would have only limited management. The majority of stands suitable for intensive management are along the south and west borders of the WSA.

Demand and Dependency

The public users of forested lands have mixed emotions regarding the management of these lands. Opinions range from favoring complete preservation to advocating total harvest, with the majority being somewhere between these extremes.

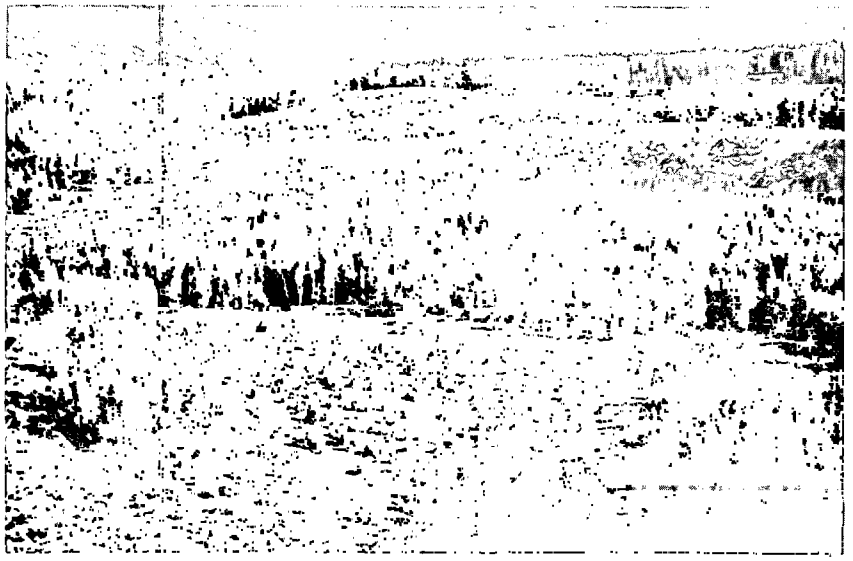


Figure 3 - 3. Natural Regenerating Clearcuts on Independence Mountain in North Park

Figure 3 - 4. Typical Saturday Morning at the Pumphouse Recreation Area on the Upper Colorado River

TABLE 3-18 -- FOREST ACREAGE CLASSIFICATION IN THE TROUBLESOME WILDERNESS STUDY AREA FOREST STRATA

	ACRES
Non-restricted manageable forest	1,872
Withdrawn Lands	
Non-commercial Species (Aspen)	478
Slopes over 36%	5,258
Withdrawn Subtotal	5,736
Total Timber Production Base	7,518

The lumber industry is the largest and most consistent consumer of forest products, but there are other demands as well. Fence posts are required by both commercial and private users, but the demand is unpredictable, fluctuating widely from year to year. The posts come from the commercial thinning of stagnated stands. Unfortunately, the number of post-sized trees available greatly exceeds the demand, resulting in many stands remaining untreated and starting to deteriorate.

Firewood, which comes almost exclusively from slash piles resulting from harvest operations, is in some demand by homeowners. However, commercial wood cutters prefer the large supply of snags available from the U.S. Forest Service lands. Some Christmas trees are cut for individual and commercial use, but the number is negligible.

The local lumber industry employs approximately 240 people per year, with very little annual fluctuation. There has been a gradual increase in lumber industry employees at the state and national levels between 1975 and 1980, with the state showing an increase of 61 percent and the nation an increase of 23 percent. However, since 1979 there has not been an increase at either level, which is a reflection of the slowdown in the construction industry.

The average annual volume purchased by the local sawmills is approximately 25 MMBF, with roughly 95 percent of the volume coming from Federal lands. Table 3-19 shows the percentages for BLM, the U.S. Forest Service, and other suppliers.

TABLE 3-19 -- TIMBER PURCHASED BY SUPPLIERS 1975 TO 1980

	Volume by Year (MMBF)						Average Volume	Percent of Total
	1975	1976	1977	1978	1979	1980		
Supplier Within Resource Area								
BLM	4.8	8.5	9.7	5.4	0	0	4.7	18.7
USFS	3.0	10.7	7.5	19.9	9.5	15.4	11.0	43.8
Other[1]	2.2	.9	6.3	1.1	1.1	0	1.9	7.6
Subtotal	10.0	20.1	23.5	26.4	10.6	15.4	17.7	78.1
Outside Resource Area								
USFS	11.8	5.2	0	8.7	11.1	7.9	7.5	29.9
GRAND TOTAL	21.8	25.3	23.5	35.1	21.7	22.3	25.1	100.0

[1]Includes Colorado State forest and private ownership.

Since interest rates have started to soar, the public has begun to repair their existing homes rather than buying new homes. In 1977 a leveling off and even a decline in the use of construction lumber began. This is apparent in both the lumber source and lumber consumption tables (Tables 3-20 and 3-21). The lumber industry within the resource area appears to follow national trends. Table 3-22 indicates that employment in the local lumber industry provides considerable income to the community.

TABLE 3-20 -- LUMBER SOURCE (VOLUME IN MMBF)

Year	Resource Area	% of Colorado	Colorado	Inland Region	United States
1975	44	24.3	181	8,307	24,569
1976	48	20.9	230	9,478	27,608
1977	45	18.3	246	10,017	29,668
1978	40	21.2	189	9,815	29,673
1979	38	22.4	170	9,397	27,791
Averages	42.8	21.4	200	9,296	27,442

TABLE 3-21 -- U.S. LUMBER CONSUMPTION BY MARKETS (MMBF)

Market	1975	1976	1977	1978	1979
Residential Construction	11,065	14,397	18,473	18,360	15,733
(Housing Starts in 1,000s)	(1,384)	(1,794)	(2,267)	(2,299)	(2,026)
Repairs and Remodeling	6,922	7,357	7,477	7,940	8,041
TOTAL	17,987	21,854	25,959	26,400	23,774

TABLE 3-22 -- LUMBER-MANUFACTURING PERCENT OF RESOURCE AREA INCOME ($1,000s)

	Lumber Manufacturing	Total of Income for Resource Area	Percent of Total
Sawmill Wages and Profits	$4,111	$54,890	7
Export Produce Income:			
With Mining (AMAX)	5,254[1]	175,495	3
Without Mining	5,254[1]	34,504	15

[1]Value of Lumber

WILDLIFE AND THREATENED AND ENDANGERED PLANTS AND ANIMALS

General Description

Most current habitat management deals with just a few of the wildlife species inhabiting the Kremmling Resource Area. Management attention has been focused on these because of their value as recreational species. For example, pronghorn antelope, mule deer, and Rocky Mountain elk, along with sage grouse and waterfowl, are given more attention than are raptors, songbirds, and small mammals. This is because more management and research has been directed to these species, and not because they are necessarily more important. For other groups of wildlife, such as amphibians and reptiles, furbearers, varmints, etc., no specific BLM habitat management exists. A total of 21,949 AUMs are currently being utilized by big game (mule deer, antelope, and elk) in the Kremmling Resource Area.

The North Park Habitat Management Plan, completed in 1977, is the activity plan for wildlife in North Park. Objectives for various wildlife populations and habitats were developed in cooperation with the Colorado Division of Wildlife. Recent discussions with the Division of Wildlife indicate that population objectives will likely change in the near future.

Habitat reductions are occurring rapidly in the resource area because of the development of subdivisions, access roads, recreational facilities, vegetation modifications, and mineral operations.

Troublesome Wilderness Study Area (WSA)

The Troublesome WSA provides summer habitat for a variety of wildlife species. Mule deer and elk are common residents of the WSA from about May 1 through December 15. Depth of snow dictates the length of stay in the area for these two species. Although a detailed wildlife inventory has not been conducted in the WSA, species common to the lodgepole pine vegetation type are expected to occur. Because of the isolated and undisturbed nature of this area, populations of wildlife are expected to thrive in the Troublesome WSA.

There are two streams totaling approximately eight miles in length in the Troublesome WSA that contain resident fish populations. The predominant fish are brook trout, with some brown trout in Troublesome Creek and an occasional cutthroat trout. The majority of the stream and riparian habitat is in good condition. Approximately one mile of the riparian habitat is being adversely affected by livestock grazing. Rabbit Ears and Troublesome Creeks are under no specific management plan at the present time.

No threatened, endangered, or sensitive plant species have been identified as being present in the Troublesome WSA. Intensive field surveys have not been conducted.

Large Wild Mammals

Mule Deer and Rocky Mountain Elk

Existing management of deer and elk habitat includes coordination with other resource management activities and the implementation of improvement projects. The other resource activities include timber management, livestock grazing management, and mineral exploration and development. Deer and elk habitat improvement projects include range fertilization, fence modification, and evaluations to determine range condition.

Nearly all timber management activities occur within deer and elk habitat. Coordination with the timber management program assures the protection and enhancement of deer and elk habitat values during and after timber harvest. Measures taken include:

1. Limiting clearcuts to less than 40 acres
2. Avoiding disturbance of meadows and water sources by not building roads and trails near them
3. Closing and rehabilitating timber harvest roads and trails found unnecessary for future management

4. Avoiding, when possible, harvesting timber during periods when wintering populations of deer and elk would be disturbed

5. Maintaining a one-to-one ratio of open habitat to forested habitat within timber management areas

6. Timing and locating timber harvest activities to avoid areas identified as elk calving habitat

Elk and mule deer habitat management is also coordinated with the range program. Forage was allocated for deer and elk on grazing allotments identified as winter range after the 1953 range survey. This allocation reserved a certain amount of forage for deer and elk on winter range allotments. Fences constructed to control livestock movement are designed to facilitate safe crossing by deer and elk. Livestock water developments are also designed to provide water for deer and elk.

Coordination with mineral exploration and development is designed to avoid conflicts with deer and elk habitat values, especially winter range. Mineral exploration on winter ranges is conducted in a manner which reduces physical harassment and loss of forage vegetation. Mineral exploration roads in deer and elk habitat not required for future resource management are closed and rehabilitated.

To date, only one habitat improvement project has been implemented to specifically improve deer winter range in North Park. Some 640 acres of sagebrush winter range were fertilized to improve the quality and quantity of winter forage. Nitrogen fertilization resulted in an increase of forage production by nearly 200 percent. A detailed report on this project is available at the Kremmling Resource Area Office.

The public lands in the resource area are currently providing habitat, primarily winter range, for approximately 3,000 elk and 7,000 deer. (Total populations were estimated at 13,000 mule deer and 8,000 elk in 1980 by the Colorado Division of Wildlife.) Deer and elk winter ranges are considered to be in fair condition. The winter range trend appears to be stable. Summer ranges are in good condition and the trend appears to be stable.

Some of the deer and elk habitat and population objectives developed in the North Park Habitat Management Plan may soon be met, assuming the following conditions:

1. Major land use changes do not occur in important deer and elk ranges.

2. Major deer and elk population changes, including both increases and decreases, do not occur.

3. Colorado Division of Wildlife population objectives remain consistent.

Specific deer and elk population and habitat objectives have not been developed for Middle Park.

Antelope

Existing management of antelope habitat includes coordination with other resources and implementation of improvement projects. The other resources are primarily range management and mineral exploration and development.

Range improvement projects are designed to benefit antelope as well as livestock. Water developments are designed to provide both livestock and antelope with high quality water. Controlled water sources, such as windmills, remain in operation after the livestock grazing season in areas where antelope need those specific waters. Ten water development projects have been implemented on antelope range in North Park. Several fence modification projects have also been implemented to improve antelope movement in North Park. Details of the projects are available in the Kremmling Resource Area.

Mineral exploration on antelope winter ranges and fawning areas is conducted in a manner which reduces physical harassment and loss of vegetation. Roads and trails constructed for mineral exploration are closed and rehabilitated if not needed after project completion. Coal development in North Park is occurring in antelope habitat. To date, mining activities such as open pits, haul roads, overburden, and stockpiles have avoided critical antelope habitats.

Existing and past management practices have basically improved antelope habitat. The additional water source developments and fence modification projects discussed above have improved antelope distribution and habitat utilization. Coordination with the other resources has reduced interresource conflicts, although antelope habitat is being lost to energy development. Public lands in North Park are currently (1980) providing yearlong habitat for an estimated 663 antelope. The Colorado Division of Wildlife estimated the 1980 antelope population in North Park to be 750. Antelope habitat appears to be in fair condition, and the trend is stable.

Most antelope habitat and population objectives listed in the North Park Habitat Management Plan could be met with the existing management. The potential exists for loss of large areas of antelope habitat to coal development in North Park.

Bighorn Sheep

Bighorn sheep are former winter residents on several tracts of public land in North Park. Due to reductions in the population along the Continental Divide summer range, bighorns no longer winter on these public land tracts.

BLM is not involved in current management of bighorns in North Park. However, recent discussions with Routt National Forest and Division of Wildlife personnel indicate that interest exists in reintroducing bighorns on the former winter range near Sheep Mountain.

Moose

Shiras moose were reintroduced in North Park near Rand during the winter of 1977 and 1978 in a cooperative effort between the U.S. Forest Service and Colorado Division of Wildlife. Current management of moose is the responsibility of these two agencies. BLM administered lands are located within the expected 10-year moose distribution area; however, no current management of these lands as moose habitat is occurring.

Upland Game Birds

Sage Grouse

Current management of sage grouse habitat involves coordination with other resource programs and implementation of improvement projects. As discussed in the section on antelope, water development projects implemented by the range management program have been designed to benefit sage grouse as well. Protective fencing has enhanced riparian vegetation that is used by sage grouse as brooding habitat.

Much mineral exploration and development in North Park has occurred in prime sage grouse habitat. The existing surface mines are located in important sage grouse wintering and breeding habitats.

The range management practices discussed above have protected and improved sage grouse habitat. The increase in riparian vegetation has provided additional brooding habitat. The North Park sage grouse population is estimated at 20,000. Existing habitat condition is good and also appears stable. No population estimates are available for Middle Park but the sage grouse population and habitat appear to be in good condition.

Sagebrush eradication in Middle Park has reduced the quantity of habitat available to sage grouse. Approximately 11,000 acres of land, most of it private, were sprayed in 1979 to increase livestock forage production.

The objectives listed in the North Park Habitat Management Plan for sage grouse habitat can be met under current management. However, the potential exists for loss of large areas of sage grouse habitat to coal development. No specific habitat or population objectives for sage grouse have been established for Middle Park.

Blue Grouse

Virtually no data is available concerning the blue grouse populations on public lands in the Kremmling Resource Area. Current management of blue grouse habitat is limited to timber harvest practices. The impacts of timber harvest on blue grouse in the Kremmling Resource Area have not been assessed.

Waterfowl and Shorebirds

The numerous bodies of water and miles of stream throughout the resource area are used by waterfowl and shorebirds for feeding, nesting, and brooding. North Park is particularly important, so most current waterfowl habitat management occurs there.

Walden Reservoir, MacFarlane Reservoir, the Hebron Slough area, and the Colorado River have been subject to waterfowl habitat improvement practices. Manmade nesting platforms have been placed at these locations and used successfully by Canada geese. Earthen islands were constructed in ponds located in North Park during fall of 1977. These islands provide nesting and loafing habitat for a number of waterfowl and shorebird species.

A site-specific management plan was written in 1977 for an intermittent wetland area known as Hebron Slough. The plan presents a series of projects designed to improve habitat for waterfowl and shorebirds. The Colorado Division of Wildlife has provided some $70,000 for implementation of the Hebron Slough project. This plan is available for review in the Kremmling Resource Area Office.

Other waterfowl management projects are limited to protective fencing of riparian vegetation near some small reservoirs and springs. Approximately 100 acres of waterfowl habitat are maintained or improved annually under current management.

Waterfowl habitat and population objectives are not being accomplished with existing management practices. Additional high quality waterfowl habitat is needed in North Park to meet population objectives. Overall, waterfowl and shorebird habitat is in fair condition, and the trend appears to be stable.

The long-term average (last five years) number of breeding pairs of ducks in North Park is approximately 16,500. Canada goose production is estimated at 300 to 400 young annually in North Park. Production estimates for ducks and geese are not available for Middle Park.

Raptors

The diverse habitats of the Kremmling Resource Area support an equally diverse population of birds

of prey. Current management of raptor habitat involves the identification and protection of nesting and hunting habitat. Raptor nest site inventories within the resource area are conducted during most breeding seasons.

The timber management program is changing the habitat of forest nesting species such as Cooper's hawk, goshawks, sharp-shinned hawks, and red-tailed hawks. New openings in the forest canopy, improved access to some areas, and loss of nesting and perching trees have resulted from timber harvest activities.

Threatened or Endangered Species

Plants

A list of plants designated as threatened, endangered, or sensitive by the Federal government is presented in the vegetation section of Chapter 2. The present management situation for threatened, endangered, and sensitive plant species consists of the identification of locations and habitat to ensure the protection of these areas wherever possible.

The Colorado Department of Natural Resources, on October 1, 1982, placed a North Park *Phacelia formosula* site on their Program Registry as a natural area. The legal description and data on this site are at the Kremmling Resource Area and Craig District BLM offices.

Little is known about the occurrences of these plant species because no intensive inventory has been conducted. The possibility exists that surface disturbing activities may have already extirpated one or more of these species populations or habitats. Significant data and scientific knowledge concerning the ecological and biological aspects of these rare species is unknown.

Bald Eagles

Bald eagles are winter residents along the Colorado River drainage and its major tributaries in Middle Park and are occasional migratory visitors in North Park. The Bureau actively participated in two years of bald eagle winter habitat inventory and assisted in a third winter investigation. The two years of intensive inventory in 1978-79 and 1979-80 were an attempt to determine the bald eagle winter population, concentration area locations, and value of public lands to the wintering bald eagles. The third year, winter 1980-81 investigation was an effort to locate bald eagle concentration areas and to assess winter food habits. This study was conducted by a Colorado State University student. Written reports for these three investigations are available in the Kremmling Resource Area Office.

North Park was included in the first two inventories. Observations of bald eagles have been recorded in North Park by the Colorado Division of Wildlife, BLM, and Arapaho Refuge personnel. However, concentration areas, nest sites, and regular winter residents have not been recorded. It was concluded that bald eagle use of North Park is limited to occasional migratory visits.

Peregrine Falcons

Current management of peregrine falcons and their habitat is limited to field surveys to locate potential nesting habitat. Surveys of suitable habitat by the Division of Wildlife have failed to locate active nests or breeding pairs of peregrines. Confirmed sighting of peregrines have occurred in the resource area, but no actual use has been recorded.

Black-footed Ferrets

One confirmed report of a black-footed ferret has been recorded in the resource area. The Denver Museum of Natural History examined a ferret taken from Grand County. More detailed data on this report is not available.

Current management of black-footed ferret habitat is limited to the mapping of white-tailed prairie dog towns in North Park. Prairie dog towns are not found in Middle Park, so no suitable habitat is thought to exist there.

State of Colorado Listed Threatened and Endangered Species

Two species listed as threatened or endangered by the state occur in the resource area. These species are the greater sandhill crane and Rocky Mountain wood frog. Current management of these two species is limited to habitat survey work by the Colorado Division of Wildlife. Essential habitat for these species is designated in several Division of Wildlife publications available at the Kremmling Resource Area Office.

Riparian and Aquatic Habitat

Riparian areas along streams directly influence water quality. Riparian vegetation shades streams, thereby keeping the water cool; helps to maintain streambank stability; and filters sediment out of surface runoff. The riparian trend was evaluated on five characteristics: (1) plant reproduction, (2) plant residue and utilization, (3) composition changes, (4) plant vigor, and (5) soil surface factors. These five factors were evaluated and each riparian area was given a numerical rating. Values from 15 to 20 inclusive have an improving trend; 10 to 14 are in a stable, but less than optimum, condition; and 0-9 are in a declining trend state. These numerical rat-

ings would be used to determine areas where protection or management is needed. Table 3-23 shows the miles of stream riparian habitat in each trend classification.

TABLE 3-23 -- RIPARIAN HABITAT TREND (MILES PER TREND CLASS)[1]

Trend Class	Stream Miles	Percent of Total
Improving	85	53
Stable	72	45
Declining	3	2
TOTAL	160	100

[1]Information on specific streams is available in the Kremmling Resource Area.

As shown in Table 3-23 only a small percentage of the riparian habitat is declining. The majority is either stabilized at some point below, or improving toward, an optimum level. The 3 miles of riparian habitat shown as declining would be improved under this alternative.

Stream Habitat Inventory Profile (SHIP)

The stream habitat inventory profile (SHIP) was used to give a numerical rating to the aquatic habitat on public land. Stream habitat was evaluated on five characteristics: (1) stream cover, (2) stream bank condition, (3) stream bank stability, (4) stream channel stability, and (5) sedimentation of the stream bed. Each stream was given a numerical rating classifying the habitat as excellent (17-19), good (14-16), fair (10-13), or poor (5-9). These ratings can be used to determine stream habitats that have potential or need for improvement. Table 3-24 shows the number of miles of stream in each habitat classification. The 8 miles of stream in poor condition would be managed for improvement to a higher SHIP class under this alternative.

Fish Species

The only trout species native to the resource area is the Colorado River cutthroat trout (*salmo clarki pleuriticus*). This trout was found only in the Colorado River drainage and is classified as a state threatened species. The North Platte drainage has no native trout populations. With the introduction in the late 1800s of non-native trout species (brook, brown, and rainbow trout), the cutthroat trout was displaced by its inability to compete with these fish. No populations of Colorado cutthroat trout have been found in streams crossing public lands in the resource area. However, the Colorado Division of Wildlife has expressed interest in using one public land stream segment as a reintroduction area for this species. Table 3-24 shows the miles of stream in each habitat classification that contain gamefish populations.

TABLE 3-24 -- TOTAL MILES OF STREAM AND MILES OF STREAM WITH GAMEFISH POPULATIONS IN EACH STREAM HABITAT INVENTORY PROFILE (SHIP) CLASS[1]

SHIP Class	Total Miles	Percent of Total	Miles w/ Gamefish	Percent of SHIP Class w/ Gamefish
Excellent	17.7	12	13.3	75
Good	47.5	31	24.8	52
Fair	69.5	46	45.2	65
Poor	16.5	11	8	48

[1]In formation on specific streams is available in the Kremmling Resource Area Office.

Present Management of Riparian and Aquatic Habitat

Streams and Associated Riparian Habitat

The existing management of aquatic and riparian areas involves primarily maintenance and protection through mitigations for proposed environmental actions that may impact these areas. All actions that may affect riparian or aquatic habitat include protective stipulations. The timber, minerals, and range programs initiate projects that involve aquatic and riparian habitats.

Specific stipulations to protect aquatic and wetland areas include (1) buffer strips of uncut timber or unmined areas along streams, (2) settling ponds to remove suspended sediment and prevent it from entering stream habitats, (3) placement of roads out of wetland and riparian areas and placement of road crossings so they disturb as little riparian habitat as possible, (4) placement of culverts so as not to block fish migration, (5) slash being kept out of streams and slash burning kept as far as possible from streams and riparian areas, and (6) fencing of wetlands and springs developed for livestock water to protect the riparian habitat from grazing.

Lakes and Reservoirs

Recreation management of the lakes and reservoirs on public lands that contain gamefish populations is the responsibility of the Colorado Divison of Wildlife. The Divison, through cooperative agreements with BLM, is responsible for the maintenance of recreation facilities and fish stocking of Seymour Reservoir, Cowdrey Lake, and Lake John.

The Division stocks East Lake in the Laramie drainage, and maintains facilities for and stocks the Williams Fork Reservoir. Walden Reservoir and MacFarlane Reservoir in North Park do not support gamefish populations at this time. Both of these reservoirs are almost entirely on public lands and may have potential for future development.

State/BLM Cooperative Agreements and Federal Regulations

BLM/Colorado Cooperative Agreements

There are three cooperative agreements between the Division of Wildlife and the Bureau that affect fisheries. The most important one is an agreement for the "Maintenance, Development, and Management of Fish and Wildlife on National Resource Lands in Colorado". It calls for the Division and BLM to "cooperate in the formulation and execution" of management plans involving wildlife resources. BLM staff are expected to consult with the Division before implementing management practices that would alter wildlife habitat conditions. The other two cooperative agreements deal with the construction and maintenance of recreational facilities at Seymour Reservoir, Cowdrey Lake, and Lake John in Jackson County. The Division has responsibility for these facilities.

Federal Regulations

Several Federal laws and regulations give the Bureau the authority to manage and protect aquatic and wetland habitats. Three specific laws limit the management of aquatic and wetland areas. The Federal Water Pollution Control Act Amendments of 1972 require a Section 404 "Dredge and Fill" Permit on any action that involves altering a stream or associated wetland area.

Two executive orders (EOs) describe items that must be considered when evaluating projects in wetlands (EO 11990, Protection of Wetlands) and in floodplains (EO 11988, Floodplain Management). These EOs outline management's responsibility to preserve and enhance the values of wetland and floodplain areas.

Demand and Dependency

Hunting, fishing, wildlife viewing, and photography are some of the important recreational opportunities provided by the wildlife resource in the resource area. Of these opportunities, big game hunting attracts the most recreationists and provides the most money to the local economy. Small game hunting, fishing, wildlife viewing, and photography also occur, but to a lesser extent. The Recreation section deals with the economic values of wildlife related recreation in more detail.

Demand and dependency on Bureau lands for fishing opportunities vary with location. In Middle Park there is a high public demand for and dependence on BLM to provide access to the Colorado River. The Colorado River between Granby and Kremmling is a high quality trout fishery with very little public access. BLM provides important access to this area. Between Kremmling and State Bridge, BLM provides access to approximately 17 miles of the Colorado River. This area supports a large recreational fishery.

In North Park, fishermen depend on three reservoirs that involve public land. Lake John, Cowdrey Reservoir, and Seymour Reservoir are partially administered by BLM. All three reservoirs support heavy fishing use during the open water season and ice fishing in the winter.

There is little dependency on the public lands in either North or Middle Park for small stream fishing. Fishermen depend more on the national forest lands for this type of fishing. However, most small streams on public lands with public access provide some fishing opportunity, and they are important in terms of the quality of the water they contribute to downstream areas.

The real value of public lands to the users of the wildlife resource and the Colorado Division of Wildlife is an indirect one. Public lands in the Kremmling Resource Area provide the majority of the habitat for wildlife species which are dependent upon the sagebrush ecosystem. Species such as deer and elk seek the sagebrush-covered hillsides and valleys for winter forage and cover. Pronghorn antelope utilize the sagebrush ecosystem on a yearlong basis. The vitality of these species and sometimes their very survival depends on the habitat components afforded by the sagebrush ecosystem.

The value of winter habitat to the survival of these species has been well documented. Public lands provide most of the winter habitat available to these species because most of the lands are located in the lower elevation zones. Some lands located in the winter range zone are more heavily used and are termed "critical". Tables 3-25 and 3-26 present winter range and critical winter range average estimates for deer, elk, and antelope. Some 326,000 acres of upland habitat are currently available to wildlife in the Kremmling Resource Area.

Sage grouse and several species of songbirds and small mammals depend almost entirely on the sagebrush ecosystem during their life cycles. Breeding, nesting, and wintering (in the case of sage grouse) occur in the sagebrush vegetation type. Many wildlife-related recreational opportunities

would not exist without the sagebrush habitat to ensure the survival of these species.

TABLE 3-25 -- ACRES OF BIG GAME WINTER RANGE KREMMLING RESOURCE AREA

	Middle Park	North Park	Total
Mule Deer	96,800	85,000	181,800
Elk	86,240	61,360	147,600
Antelope	0	15,000	15,000

TABLE 3-26 -- ACRES OF CRITICAL BIG GAME WINTER RANGE KREMMLING RESOURCE AREA

	Middle Park	North Park	Total
Mule Deer	29,200	25,280	54,480
Elk	29,200	13,200	42,400
Antelope	0	8,000	8,000

The role of public land habitat in assuring the survival of wildlife will become more important in the future. Since BLM operates under the multiple-use concept, wildlife habitat values are considered in all actions affecting public lands. This is not necessarily the case in the development or utilization of private lands for people-related needs such as energy and fiber. These private lands may provide important habitat values that are not considered in many actions. Wildlife populations displaced from these private lands will become increasingly dependent on public lands.

VISUAL RESOURCES

General Description

Visual resource management in the Kremmling Resource Area is based on a visual resource inventory done in 1979-1980. The inventory evaluated the landscape's physical appearance, or scenic quality; visual sensitivity; and location. Based upon this information, potential management classes were identified. The inventory information is contained in four booklets: the Visual Resource Inventories and Analyses for North Park and Middle Park and the Pictorial Presentation of Landscape Units in North Park and Middle Park. These booklets are on file in the Kremmling Resource Area Office. The inventory was conducted according to standard BLM procedures, which are also available for review.

Three components -- scenic quality, sensitivity, and viewing distance -- are compiled to formulate management classes. These classes are divided into five levels: I, II, III, IV, and V (see Glossary for definitions). Class I landscape designation applies only to designated areas, such as wilderness, natural areas, and wild and scenic rivers. There are no Class I areas on public lands administered by BLM in the Kremmling Resource Area. Class II areas are of special concern for visual resource management because of their scenic value, sensitivity, and location.

Current Management

Visual resource management (VRM) classes are presently established for only a portion of North Park. Upon completion of this plan, VRM classes will be established for the entire resource area.

Current management is directed towards the maintenance of visual quality in "sensitive" Class II areas. These are areas of special concern because of their inherent scenic value and locations along major travel routes, such as highways and the upper Colorado River. Maintenance of visual quality in these areas is achieved primarily through mitigating measures designed to reduce the degree of contrast with the surrounding landscape to acceptable levels as established for Class II areas. Efforts are made to maintain the visual quality of the remaining public lands in the resource area and to meet the needs of other resource uses and activities. The vehicle for accomplishing this is the Bureau's Visual Resource Management System.

Demand and Dependency

Maintaining the visual resource is important in the Kremmling Resource Area because tourism has been and is an important industry. Both vacationers and locals drive through the landscape to hunt, fish, boat, camp, and view the countryside and surrounding mountains. Many people live in the resource area because of its remoteness and visual qualities. The visual setting is an important part of the lifestyle in both North and Middle Parks. Local people, as well as tourists, expect to see open mountain vistas, cool rushing water, high forested slopes, and vast, rolling sagelands.

CHAPTER 3

RECREATION

Current Management

For ease of discussion, current management is described in terms of the major activities occurring on public lands.

River Running

Over the past few years the upper Colorado River has become a major recreation feature. Since it is the closest major whitewater river to the Denver metropolitan area, there has been a 24 percent increase in its use between 1976 and 1980. It ranks second in total use among whitewater rivers in Colorado (RE&I, Inc. 1980). The only developed BLM recreation area in the Kremmling Resource Area is the Pumphouse Recreation Area, which is the major access point on the upper Colorado.

Increasing popularity of the Colorado River for floatboating from Gore Canyon (Pumphouse) to Dotsero resulted in the preparation of an interim management plan in 1978 and a final management plan in 1982. The Kremmling and Glenwood Resource Areas share management responsibilities for public lands adjacent to over 60 miles of the Colorado River. Eighty-five percent of the land adjacent to the river is public. Kremmling manages the upper 14 miles from Pumphouse to State Bridge. Approximately 82 percent of the total use on the river originates on this upper stretch.

The management plan identified a variety of existing management problems, including a lack of public knowledge of land status along the river, river safety, available or alternative camping places, access points, water quality, and sanitation. The final management plan sets forth management guidelines to respond to these and other problems. The complete management plan is available for review in both the Kremmling and Glenwood Springs Resource Area Offices.

BLM made improvements along the river starting in 1977. These have included putting in restrooms; upgrading launching areas; improving access roads; developing parking, picnicking, and camping areas; and installing a water system. A "pack out your trash" policy was implemented and is still generally working. Commercial outfitters are particularly interested in maintaining a clean environment along the river.

In 1979 a permit system was initiated for commercial outfitters. This was done to determine river use and provide a monetary return for commercial use of public lands. No restrictions were imposed nor was use limited by the permit system. In the same year BLM began hiring seasonal workers (river rangers) to monitor use of the river and provide public information and maintenance.

The upper Colorado River is in a relatively undisturbed environment, except for a railroad. In addition, an occasional county road parallels the river.

In research conducted in 1978 and 1979, river users identified the following as moderate to serious problems:

Inadequate toilet facilities at put-in/take out points	41.2%
Too few toilet facilities along the river between points	36.4%
Too few drinking water sources	26.9%

In addition, 41.6 percent of those surveyed felt there were too many people at put-in points (see Figure 3-4), while 26.5 percent felt there were too many people on the river. Repeat visitors and private parties generally felt stronger about the problems than did first-time visitors and commercial parties. The survey also indicated that 86.2 percent support the "pack out your trash" policy and 78 percent would support restricting the number of people using the river at any one time. A majority (69.6 percent) also felt a good job of management is being done, indicating that the management actions taken to date have addressed most concerns at present use levels (Forest Service 1978 and 1979). Complete results of the survey are available at the Kremmling Resource Area Office.

Off-Road Vehicles

Off-road vehicle use occurs mostly as a means of transportation for other types of recreation, such as hunting and firewood gathering. One exception is the North Sand Hills in North Park. In addition to their natural, cultural, and geologic value, the North Sand Hills have become an attractive place for off-road vehicles.

The North Sand Hills were withdrawn from mineral entry in 1965 because their unique geology made them worthy of protective management as a Natural Area. Use of the area remained light until the early seventies, when motorized vehicles became the predominant activity. During this time of increased use, the East Sand Hills in the Colorado State Forest were officially closed to motorized vehicles, which made the North Sand Hills the only major dune area in Colorado available for motorized use.

In order to establish management objectives for the Hills, BLM contracted for a geological study in 1976 and a cultural inventory in 1977. With the passage of the Federal Land Policy and Management Act in 1976, the North Sand Hills Natural Area and contiguous public lands became an instant wilderness study area. In order to protect the values

identified by these studies and to manage the area as a wilderness study area, BLM developed an interim management plan in 1977. This plan restricted motorized vehicles to existing roads and trails and to nonvegetated portions of the dune area.

The best access route to the Hills is across private land. The owner has been inclined to allow free passage and BLM has provided signs to assist the landowner in preventing disruption of his ranching operation. Problems related to trespass, both intentional and unintentional, have been identified, but, overall, the interim management plan has worked, with no major problems on the public lands presently identified. While intensive use occurs on three to four weekends during the summer, the recreational opportunity classification for the area is semiprimitive motorized because of the opportunities available for most of the year.

Other areas in the resource area receive light to moderate off-road vehicle use. This use occurs generally where access was originally provided for some other resource use, such as logging. Places where this use is occurring in North Park include Independence Mountain and the McCallum Oil Field area. In Middle Park, recreational vehicle use is occurring in the Resource Conservation Area immediately north of Kremmling and at Smith Mesa, Corral Creek, Drowsy Water, Dice Hill, and Yarmony Mountain. As other areas are opened through access acquisition light to moderate use can be expected to occur.

In addition to the North Sand Hills, other small areas in the resource area have been restricted or closed to ORV use on a case-by-case basis in response to specific resource management needs (e.g., cultural, wildlife, etc.). For example, two meadows on Dice Hill have been closed to protect wildlife habitat.

Hunting

The majority of big game hunting occurs on non-BLM managed lands. However, the public lands provide habitat critical in maintaining the various wildlife populations and thus maintaining the regional hunting opportunities (see Wildlife section).

Fishing

The public lands in the Kremmling Resource Area do not provide major opportunities for fishing, with the exception of segments of the Colorado River. The Colorado River from Gore Canyon to State Bridge passes primarily through public lands, thus providing some 17 miles of public fishing access. In addition, the Colorado River between Granby and Kremmling is a significant fishery. Because most of this stretch of the river is bounded by private lands, the few places where public land does adjoin the river are especially attractive to fishermen.

BLM has developed a parking area at the Sunset fishing access near Parshall. In addition, the Colorado Division of Wildlife has developed the fishery at six reservoirs bounded by public lands in North Park and maintains recreation facilities at each through cooperative agreement.

Other Types of Recreation

Most of the public lands in the resource area, excluding the upper Colorado River corridor and the North Sand Hills, are presently managed as extensive recreation management areas. These public lands provide opportunities primarily for dispersed activities in a roaded natural or semiprimitive motorized setting. Over the past several years, BLM has acquired easements across private land in order to provide public access for timber harvesting, recreation, and other resource activities. Easement acquisitions include Kinney Creek, Smith Mesa, Black Mountain, the Strawberry area, Buffalo Peak, Green Ridge, and Owl Mountain. These opportunities are important because they supplement the opportunities available on surrounding national forest and park lands. They also provide a place to recreate in a relatively unrestricted setting.

Demand and Dependancy

Recreation and tourism is the second most significant element of the regional economy (see Economics section of Chapter 2). While a majority of the use which makes recreation an important part of the regional economy occurs on U.S. Forest Service, National Park Service and other non-BLM administered public lands, the public lands administered by BLM do play an important role in the regional recreation picture. The importance of this role is expected to increase in the future.

Because a large part of the resource base for recreation is publicly owned and provided at little or no direct cost to the user, it is difficult to determine the market value of recreation as compared to other resources such as timber and mining. Table 3-27 is an attempt to establish the value of recreation so that its relative significance may be compared to that of other resources. As can be seen in this table, there is a substantial value (i.e., the incremental value) which the public receives for which no direct cost is paid.

TABLE 3-27 -- KREMMLING RESOURCE AREA REGIONAL VALUE OF RECREATION[5]

	1978			1979		
	Recreation Visitor Days	Incremental Value/ RVD[1]	Incremental Values[2,3]	Recreation Visitor Days	Incremental Value/ RVD	Incremental Values[2,3]
			(000)			(000)
Floatboating (private trips)	4,800	$43	$206	5,922	$48	$284
Other Boating	25,953	74	1,921	29,294	82	2,402
Developed Camping	244,700	50	23,235	420,300	56	23,537
Primitive Camping	40,600	36	1,462	79,500	40	3,180
Camping Not Defined	59,177	46	2,722	48,962	51	2,497
Fishing	219,009	49	10,731	190,164	54	20,269
Hiking and Climbing	126,281	65	8,208	222,243	72	16,001
Deer Hunting	12,929	99	1,280	17,071	110	1 ,878
Other Big Game Hunting	24,979	114	2,848	28,626	127	3,636
Water Fowl Hunting	118	158	19	699	176	123
Upland Birds Hunting	2,576	86	222	4,008	96	385
Other Small Game Hunting	3,562	83	296	9,991	92	919
Off Road Vehicles	72,279	58	4,192	71,682	65	4,659
Sightseeing	214,385	70	15,007	224,954	78	17,546
Other Outdoor Recreation	263,583	27	7,117	234,286	30	7,029
Total Incremental Value	.....	.....	$68,466	.....	.....	$94,345
Local Economic Impact[4]	.....	.....	22,657	.....	.....	28,650
Total Recreation Value	.....	.....	$91,123	.....	.....	$122,995

[1]Values deflated to 1978 dollars by means of Consumer Price Index.

[2]Local economic impact equals exports of the gas stations and auto dealers, eating and drinking places, trade NEC, hotels and motels, recreation facilities, and service NEC sectors.

[3]*Incremental Value*: The value that recreationists are estimated to receive, over and above monetary costs. Average incremental values are obtained from surveys of how much recreationists would be willing to pay for different activities. They are added to monetary recreation costs in order to account for values received for which no charge, or a minimum charge is made (such as access to Public Lands, National Forests, etc.).

[4]Includes floatboating on commercial trips and skiing at Winter Park plus other local spending by all recreationists.

[5]Dispersed use on BLM lands and use in Rocky Mountain National Park are not included due to lack of adequate data. Primary data sources are National Forest use data, Colorado Division of Wildlife (hunting and fishing), and BLM (floatboating).

Note: Approximately 40 percent of the local economic impact is derived from skiing and associated activities at Winter Park.

Due to a lack of demand data, it is difficult to develop an accurate supply-demand picture, especially for BLM administered lands. However, current use and the preferences indicated by that use enable certain conclusions to be made about the supply-demand-need picture and the implications for future management of public lands.

The majority of the BLM administered lands provide recreation opportunities for dispersed activities in roaded natural and semiprimitive motorized settings. In North Park, the public lands provide significantly different types of recreation than surrounding national forests because of their topography and vegetation. However, their potential for substituting for, or supplementing, the recreation opportunities available on the national and state forests is low. Current use indicates that users generally prefer the type of opportunities available on the mountainous and forested lands surrounding the North Park basin. An exception to this is the off-road vehicle use in the North Sand Hills that currently provides a unique recreation opportunity for Colorado. The Independence Mountain area has potential similar to that available on more popular national and state forest lands.

Use of the North Sand Hills on peak weekends is approaching the point where overcrowding could become a problem, both in terms of maintaining the desired recreation experience and protecting resource values (e.g., geologic and cultural). In addition, the public lands in the North Park area are important for maintaining wildlife populations, which have a direct effect on hunting and its contributions to the local and regional economy.

Overall, the Bureau's limited management (visitor information, signing, access acquisition, limited maintenance, etc.) of the public lands in the North Park and Laramie River areas is meeting current needs. Such management, with the exception of the North Sand Hills and Independence Mountain, is expected to meet recreation needs during the life of this plan.

Because they are within a two- to three-hour drive of the Denver metropolitan area, the demand for recreational opportunities on the public lands in Middle Park and along the upper Colorado River is

expected to continue to increase. Public lands adjacent to national forests will continue to receive spillover usage, especially as the forests become overcrowded and access is restricted by road closures. Because of their location and topographic and vegetation similarities, these adjacent BLM lands provide recreational opportunities in settings similar to the type available on the national forests.

As recreation use in the region continues to grow, demand on the public lands in the Middle Park region will also increase. Over the next five years, dispersed recreation in the region is expected to increase by roughly 12 percent. With this increase in demand, the existing management posture (i.e., limited management) may not be adequate to protect the existing opportunities or provide additional opportunities.

In the Colorado River corridor, management actions will continue to be necessary to maintain the current type of recreation opportunities. User studies conducted in 1978 and 1979 indicate that many users already feel certain areas (i.e., put-in points, camping areas) are overcrowded and facilities, especially sanitation, are inadequate. In addition, the Colorado River is the primary supply for river related recreation in the region, which indicates that the pressure on the river corridor will continue to increase. The possibility of consolidating isolated pieces of public land along the Colorado River between Granby and Kremmling through land exchanges needs to be evaluated in terms of providing highly sought after fishing opportunities.

As with demand, economic dependency in terms of recreation is difficult to measure due to a lack of adequate data. Since the permit system for commercial outfitters on the upper Colorado River was implemented in 1979, data related to floatboating has become available. Total 1980 gross receipts by commercial outfitters on the upper Colorado River from the Pumphouse to Dotsero are estimated to be $904,000. It is also estimated that this river segment accounts for 19 percent of the floatboating expenditures (both direct and indirect) in Colorado, which would amount to approximately $4.3 million (1980 Colorado Whitewater Boating Use and Economic Impact Study). In 1981, there were 44 commercial outfitters permitted on the upper Colorado River. Approximately 70 percent of the use on the upper Colorado River involved commercially operated trips.

As discussed previously in the wildlife section, public lands are critical for maintaining wildlife populations upon which hunting depends. It is difficult, however, to determine a monetary value for this.

In a noneconomic sense, people, especially those living within the resource area, depend upon the public lands for contributing to their lifestyle. The availability of public lands in their "backyards" has traditionally played, and continues to play, an important part in the lifestyle of North and Middle Parks. While often taken for granted, residents of the resource area rely on the public lands for the opportunity to engage in a variety of dispersed recreation activities in roaded natural or semiprimitive settings with relatively few management restrictions.

Public attitudes regarding recreation on public land within the resource area generally center on the upper Colorado River and the North Sand Hills. Due primarily to the permitting process on the river, commercial outfitters are the dominant sector of the public heard from regarding river management. Their main concerns are adequate access and facilities and continued economic viability of their operations. Organized four-wheel drive clubs from the Ft. Collins-Loveland-Longmont area are the dominant sector of the public heard from regarding management of the North Sand Hills. These clubs have taken an active interest in seeing that the dunes remain open to use by motorized vehicles.

WILDERNESS

Current Management

With the exception of livestock grazing, there are no management activities currently taking place in the Troublesome Wilderness Study Area (WSA), the resource area's only wilderness study area. Since its identification as a potential study area during in the wilderness inventory, the area has been managed according to the *Interim Management Policy and Lands Under Wilderness Review* (December 12, 1979). As of February 1984, there had been no proposals for activities that would have been inconsistent with the interim management policy.

Demand and Dependency

In its Colorado supplement on RARE II, the Forest Service estimated that wilderness use in Colorado had increased approximately ten percent annually to a level of about 540,000 visitor days per year in 1977. National forest wilderness areas in the region do not currently (1981) limit use through issuance of permits. Such restrictions are considered likely in the near future, especially in heavily used areas such as the Indian Peaks Wilderness Area. In Rocky Mountain National Park, the National Park Service has implemented a designated campsite permit system for its backcountry areas

which encompasses the proposed wilderness area in the Park.

Due primarily to the lack of legal access from the west and south, the Troublesome WSA receives little recreation use. The owners and guests of the private inholding and adjoining private lands use the public lands for a variety of recreation activities, including hunting. Few people are currently dependent on the WSA for wilderness related opportunities and values. As use of other wilderness areas in the region increases, the demand for additional areas providing similar opportunities will increase. However, its relatively small size limits the capability of the Troublesome WSA to meet increasing demands.

Public attitudes within Grand County towards designating this area as wilderness are predominantly negative. The general feeling is that there is already enough wilderness in the county and region. Statewide, the public attitudes towards the Troublesome WSA vary from strong support for wilderness designation from the environmental community in the heavily populated areas of the Front Range, to mild opposition from industry. The main opposition has come from the absentee owners of the private inholding in the WSA.

Suitability Recommendation

The Bureau is required by Section 603 of the Federal Land Policy and Management Act (FLPMA) to study wilderness study areas and recommend to Congress, through the Secretary of Interior and the President, whether an area is suitable for wilderness designation. Continuing interim management of the study area is not allowed under FLPMA.

Under this alternative, the Troublesome WSA would not be recommended as suitable for wilderness designation. The primary reason it has been considered for wilderness designation is that it is a block of public land in an essentially undisturbed condition. When compared with other existing and potential wilderness areas in the region, the Troublesome WSA has a very similar ecosystem and provides similar opportunities for solitude and primitive, unconfined recreation.

The area lacks any geologic, ecological, educational, scenic, or historical features significant enough to recommend their protection by wilderness designation. Because it is a relatively small area and other larger areas are abundant in the region, the Troublesome WSA would not be a significant potential addition to the National Wilderness Preservation System on a regional, state, or national basis. It would not significantly expand wilderness opportunities within a day's driving time of major population centers and would not add balance to the geographic distribution of wilderness areas.

Since the adjoining national forest lands are not under wilderness management, the Troublesome WSA would not afford protection to an entire watershed or ecosystem, nor would it provide opportunities for a sustained wilderness experience. There are no significant multiple resource values, such as watersheds, wildlife habitat, or archaeological sites, that would depend on wilderness preservation for their protection.

Finally, the nonwilderness management of adjoining national forest lands, especially those upstream, and the private inholding within the Troublesome WSA would not presently adversely affect the Bureaus ability to manage the area as wilderness; however, such management is subject to change.

When these reasons are evaluated on a cumulative basis, the Troublesome WSA is not considered a quality addition to the National Wilderness Preservation System and is recommended as nonsuitable for wilderness.

Public comments during the wilderness review process expressed a desire for further consideration of the WSA for wilderness if the U.S. Forest Service reevaluates the adjoining National Forest lands in some future land use plan. BLM can evaluate wilderness potential under its general land use planning authority and would consider a joint study with the Forest Service at some future time if the public lands in the Troublesome area are still found to have wilderness characteristics.

The Troublesome WSA will be managed under the Bureau's interim management policies for wilderness study areas until completion of the wilderness review process. If the recommendation presented here is adopted, that the Troublesome WSA is nonsuitable, then the area would be managed for multiple use, with emphasis on intensive forest management and continued range management for livestock.

A separate EIS and Study Report will be prepared and submitted to the Secretary of the Interior who will forward the final recommendation to the President.

CULTURAL RESOURCES

General Description

Cultural resources are tangible remains of man's past. They are fragile, nonrenewable, and limited in their distribution. They range from small artifacts,

such as arrowheads, to large complexes, such as a group of historic buildings.

Federal law protects significant cultural resources in several ways. First, cultural inventories are required before any surface disturbing activity can occur on public land. Then, if anything significant is found, it must either be left unmolested or be removed according to established archaeological procedures. In addition, some interpretive and research activities can be authorized.

Current Management

In the Kremmling Resource Area, emphasis has been placed on inventorying those places where surface disturbing activities will occur, such as oil well sites or proposed coal strip mines. Any cultural resources found are evaluated for their eligibility for inclusion on the National Register of Historic Places. Those that are eligible for the National Register receive some degree of protection. In some cases, other significant finds are also protected.

For the most part, the older a find is, the more significant it is. However, the Bureau tries to protect a full array of significant resources throughout the range of prehistoric and historic occupation.

The Bureau has designated three classes of cultural resource inventory (BLM Manual 1800):

Class I: Existing inventory or literature search.
Class II: Sampling field inventory (all sampled units are inventoried to Class III standards).
Class III: Intensive field inventory.

A Class III inventory is required before any surface disturbance may occur.

If the Bureau initiates a project, it must conduct its own inventory or contract an outside archaeologist to do it. If a private company or another government agency initiates a project, they must arrange and pay for a cultural inventory.

If something with potential value is found, the most immediately cost-effective approach is to redesign the project to avoid disturbing the find. In some cases this is not feasible and further study is necessary to determine the significance of the find. Impacts to significant sites eligible for listing on the National Register of Historic Places must be mitigated before any project work can take place.

In the Kremmling Resource Area, avoidance has been most successful. Fencing has been used to protect certain sites from transmission line projects, coal mines, and off-road vehicles. Sites in the North Sand Hills are monitored during periods of high use by recreational vehicles. Other forms of protection have included compliance inspections and lease stipulations to assure that cultural remains are reported or protected during construction on public lands.

Although there are no sites recorded or inventories completed within the Troublesome WSA, its topography, density of game, proximity to water, and plant resources and the presence of nearby archaeological sites indicate that sites probably exist there. Wilderness designation, which is not proposed under this alternative, would withdraw the area from mineral entry and timber production, eliminating two major impacts. Impacts to cultural resources would then be limited to incidental vandalism and natural causes.

Vandalism to cultural resources, which is not always intentional or malicious, seems to be concentrated in areas with intensive use, easy access, or special attractiveness. Off-road vehicle impacts in the North Sand Hills are substantially reduced due to protective measures and surveillance, but incidental man-caused as well as natural disturbances still occur.

Historic sites in the resource area undergo degradation due mainly to weathering, seasonal use for hunting bases, and use as bottle and barnwood collecting areas. There is also unauthorized collection (pot-hunting) of both archaeological and historic remains. Roads, trails, and ways resulting from timber sales, mineral activities, utility corridors, and off-road vehicles allow access to formerly isolated areas.

The current lack of manpower, surveillance, and enforcement make it impossible to protect most of the cultural resources in the Kremmling Area. Some areas particularly harmed by the effects of unmanaged off-road vehicle use include the Independence Mountain area, RCA pasture areas north of Kremmling, North Sand Hills Natural Area, Sulphur Gulch uranium exploration area, and Tri-State 230 kV utility corridor. Potential adverse impact areas include pipeline and utility corridors, timber sale road systems, and various other roads, trails, and ways.

Natural degradation of cultural resources due to water and wind erosion, wildlife and livestock grazing, wildfire (or spread of man-caused fire), and other forms of general decomposition is an almost unavoidable problem. While erosion may uncover previously unknown sites, unchecked erosion caused by man or nature is largely detrimental to cultural remains.

National interest in cultural resources was demonstrated when Congress passed the Antiquities Act of 1906. Other major milestones in cultural resource legislation include the National Historic Preservation Act of 1966 (as amended 1980), Ex-

ecutive Order 11593, the Advisory Council on Historic Preservation's 36 CFR VIII 800, and the Archaeological Resources Protection Act of 1979, which includes specific directives for Federal agencies to interact and exchange data with the public.

Scientific evaluation of cultural resources serves to document our country's heritage. Lessons can be learned from past cultures that can be applied to future use of our natural resources. Important cultural reports (CRs) from the resource area will be offered for publication through the Colorado BLM's CR Series.

Vandalism is seen in indiscriminate hunting for pots and arrowheads and in the removal or destruction of barnwood or other prehistoric and/or historic artifacts, all of which are frequent recreational activities. Most amateur collectors are aware that it is illegal but feel that either the government will collect artifacts and keep them isolated in storage or that other collectors will get them.

A more significant motivation for this behavior is the link to the past, to a vanished Western way of life, which artifact collection and possession provides access to. Pride of ownership adds to the overall experience of possession of artifacts. Many collectors apparently do not engage in extensive digging and sifting operations, letting natural erosive forces expose their finds.

Lack of sufficient in-house BLM manpower or industry responsibility for cultural resource inventory and evaluation has created the cultural resource consultation profession. BLM has let four contracts funded by recreation, planning, and coal in the Kremmling Resource Area since 1976. Other consultant fees are borne by industry in non-BLM initiated actions involving realty, oil and gas development, coal development, minerals exploration, water diversion/impoundment, and power transmission.

While illegal sales of cultural resources apparently take place in southern Colorado and the nearby Southwest, there is no evidence that black market activities take place in the Kremmling Resource Area. Lack of in-house law enforcement authority or cooperative agreements does not allow for control of illegal activities.

Two sites containing approximately 710 acres are currently receiving intensive management. There are no current inventory contracts in effect.

LANDS AND REALTY

The lands and realty program has primarily been a support function for Bureau and non-Bureau projects. These projects involve authorizing rights-of-way, temporary use permits, and leases where private, corporate, and governmental parties use public lands for project location. Another phase of the lands program includes other Bureau activities, such as acquisition of easements, resolution of unauthorized use situations, and disposal of lands.

Current Management

Rights-of-Way

Approximately 80 percent of the rights-of-way are linear and include highways, railroads, electrical and telephone lines, pipelines and irrigation ditches. Detailed descriptions and locations of each case may be obtained from the Master Title Plats located in the Kremmling Resource Area Office and from the individual case files.

On an annual basis, BLM issues 15 to 20 rights-of-way for approximately 40 linear miles and 500 acres. Corporations and utility companies account for about 50 percent of all grants. For the past five years, the types of grants have shifted from ditches, reservoirs, and major highways to residential utilities, underground telephone lines, county road realignments, and energy related roads.

After construction and rehabilitation, most existing rights-of-way have a long-term impact on other resources. Large powerlines present long-term visual intrusions on the landscape. Another problem is off-road vehicle use along powerline and pipeline corridors. With these and other projects, emphasis is now on preapplication briefings with the applicant to address these and other resource concerns and to identify feasible mitigation measures.

Historically, rights-of-way were established near traditional access routes such as county roads, state roads, and railroads. The terrain, which was usually near river bottoms, was favorable and maintenance was easily achieved. Recently, utility companies have sought new corridors approximately two to five miles from these transportation routes to reduce visual impacts. The net result has been the *de facto* development of two general corridor systems.

The Western Region Corridor Study Group has printed a map delineating probable utility corridors to 1990 and planned corridors for 1990 to 2020. Six proposed corridors traverse North Park, while five corridors traverse Middle Park.

Recreation and Public Purposes

The Recreation and Public Purposes Act provides for the sale or lease of public lands to state and local governments and nonprofit entities.

These lands may be used for parks, picnic areas, rifle ranges, sanitary landfills, and similar facilities.

Jackson and Grand Counties each contain several Recreation and Public Purpose leases and patents. Most are near the population centers of Walden, Kremmling, and Granby. The Colorado Division of Wildlife manages two recreation complexes at Lake John and Delaney Buttes. Detailed information can be found in each individual case file.

BLM monitors leases and patents for compliance with stipulations and patent reversion conditions. A major concern is adequate rehabilitation of expired leases, especially for sanitary landfills.

Exchanges, Sales, and Acquisitions

Exchanges and sales account for a small number of realty actions. However, isolated small 40- to 120-acre tracts are located throughout the resource area. Some of these parcels may not benefit BLM's resource management program due to inadequate access and the fact that they bordered or surrounded by ranches, second home developments, state lands, and national forests.

One- to five-acre public land parcels remain in three separate small tract homesite areas -- Stillwater with 2 parcels, Ptarmigan with 92 parcels,and Williams Fork with 13 parcels.

Another land ownership problem is split estates: (1) state or private surface ownership over Federal subsurface minerals and (2) Federal surface over private or state subsurface minerals. Use authorizations by any party of split estates often leads to management disparity, as experienced in North Park energy areas. For example, private residences are built over Federal minerals estate that may have high coal development potential.

The only acquisition program in the resource area involves obtaining road access easements. Since the mid-sixties, BLM has acquired 21 easements in support of the forestry program. Emphasis is now on obtaining recreation easements along the upper Colorado River between the Pumphouse and State Bridge, Colorado.

Classifications

Most public lands were classified under the Classification and Multiple Use Act of 1964 for retention in Federal ownership and multiple use management. These lands were segregated from agricultural entries and public sale but not from mining location or mineral leasing laws.

All classifications have recently been reviewed after extensive field and case file examination. As a result of this review, revocations have been recommended in situations where the classification is no longer serving a useful, on-the-ground purpose.

Withdrawals

Since 1909, certain lands have been segregated from operations under the public land laws and the mining laws. Approximately 34,000 acres are presently withdrawn. Withdrawals are being reviewed to assess whether they are being used for the purposes intended.

One of the large acreage withdrawals consists of public water reserves, which total approximately 6,000 acres. These 40-acre parcels were identified to protect water sources from settlement, sale, or entry.

Ten power site reserves account for about 9,000 acres. No new power projects have been built on the public lands during the past 10 years. However, as a result of the Windy Gap water diversion project, the Northern Colorado and the Colorado River Water Conservancy Districts agreed to study the feasibility of the proposed Azure Project, an irrigation and power reservoir south of Gore Canyon.

Permits and Leases

As a result of FLPMA, all previous special permit authorizations are being converted into temporary use permits (TUPs). These permits provide short-term revocable authorizations for land actions that involve small-scale land modification. On the average, six to seven TUPs are issued per year.

Currently, there are no realty related leases in the resource area other than Recreation and Public Purpose leases.

Unauthorized Use

A moderate level of unauthorized use occurs in the resource area. Some impose visual intrusions into the characteristic landscape or represent a public health hazard.

Resource management is inhibited when buildings or other structures block proposed access roads or recreation developments. Presently, owners of unauthorized facilities are strongly encouraged to apply for rights-of-way or other authorizations to protect capital investments.

The resource area contains approximately 5,000 acres of public lands used for hay meadow or improved pasture. AUMs have been adjusted, in some cases, to reflect this more intensive use. Permits may also be issued to resolve significant cases of unauthorized agricultural use, pending a decision to either (1) lease or sell the affected lands for agricultural purposes or (2) terminate the agricultural use on public lands.

Occupancy trespass is not a significant problem. Old, abandoned cabins dot the resource area but most are unsuitable structures for permanent occupancy. During a cadastral survey in 1979, two

summer cabins were found to be on public lands along Colorado Highway 125.

Unauthorized reservoirs, irrigation ditches, and other ranch improvements are common in the Kremmling Resource Area. Most owners have been notified of the situation and several right-of-way applications have been filed.

There are also small-scale, unauthorized facilities, such as small dumps, telephone lines, and advertising displays, that are not functional. Owners are required to remove these and rehabilitate the area. If the owners cannot be identified, BLM removes the structures or debris.

Zoning Regulations

Most governmental entities in the resource area have implemented zoning and subdivision regulations. A detailed description of these regulations can be found in publications on file in the Kremmling Resource Area Office.

Most of the rural private land in Grand County is zoned "Forestry" and "Open". These categories allow a wide variety of land uses, including residential developments with a minimum lot size of two acres. The Grand County zoning ordinance requires special use permits for public utility transmission facilities.

Private land in Jackson County is zoned "Ranching". Special use permits are required by the county for most structures and land alterations that are not directly related to ranching operations.

Demand

Rights-of-Way

The economics discussion in Chapter 2 points out that the resource area and Front Range populations are increasing dramatically. This is leading to a tremendous demand for new raw water supplies and efficient use of existing sources. As a result, large-scale water projects are anticipated, such as the Williams Fork Reservoir enlargement and construction of the Azure Reservoir on the Colorado River. These projects will also involve access roads, utility corridors, and other ancillary facilities.

Front Range community growth is also contributing to a significant energy demand. This, coupled with an abundant supply of coal-generated energy near Craig, Colorado, should greatly influence the number of high voltage powerlines, since the resource area lies between the area of consumption and the supplier.

Resource area population has increased 57 percent from 1970 to 1980. Projection of similar growth in the 1980s suggests a demand for more rights-of-way for residential electric and telephone lines and access roads. Demand for irrigation ditches and reservoir construction should remain constant in the future.

Future oil and gas drilling, along with coal extraction in Jackson County, will require new rights-of-way or amendments for haul roads, utility lines, water monitoring wells, diversion ditches, sedimentation ponds, and other support facilities.

Recreation and Public Purposes Actions

Increased second-home development in eastern Grand County, higher private land prices, and the presence of BLM land immediately adjacent to communities will lead the public to continue to depend on Recreation and Public Purposes leases and patents. Jackson and Grand Counties will rely on public lands to locate sanitary landfills and recreational facilities on public lands near Walden, Kremmling, Granby, and other small communities.

Exchanges, Sales, and Acquisitions

The public considers the sale and exchange of public lands to be a high priority. The U.S. Forest Service has earmarked numerous parcels of isolated BLM lands that are adjacent to present forest boundaries. In addition, ranchers have noted numerous, isolated 40- to 120-acre parcels that are surrounded by their privately owned ranches.

Public requests have also been received asking BLM to sell lands. Over one-half of these originate from the Dillon, Colorado, area regarding the Ptarmigan Small Tracts. Sales inquiries have also been received on small public parcels in the Winter Park and Fraser areas.

The demand for recreation easements is rapidly increasing. Numerous hunters, crosscountry skiers, and hikers have expressed a demand for public access to the Drowsy Water area. Fishermen want public access to isolated public lands along the upper Colorado River from Granby to Kremmling. In addition, recreation easements have been requested by river floatboaters along private land parcels adjacent to the upper Colorado River between the Pumphouse and State Bridge, Colorado.

Withdrawals and Classifications

The demand for major withdrawals should be insignificant in the future. Casework analysis will center on a comprehensive review of withdrawals held by the Bureau of Reclamation and the U.S. Forest Service. Land classifications will be limited to site-specific proposals for Recreation and Public Purposes leases and patents.

Permits and Leases

Energy companies have indicated a desire for permits to authorize short-term water monitoring

wells and material stockpiling areas. On the whole, 5 to 10 permits are anticipated annually.

The number of leases may increase during the next 10 years. These authorizations are designed for long-term facilities that do not transport some physical item or electronic message. Thus, leases will be issued for air and water monitoring stations, storage yards, and similar facilities.

Dependency

Dependency within the lands program can be separated into locational dependency and socio-political dependency.

The distribution of public land creates a locational dependency. Major transmission lines, pipelines, and roads must traverse BLM tracts due to the scattered distribution of public lands throughout the resource area. Failure to use public lands would result in zigzag corridors. A second type of locational dependency arises when ranches, subdivisions, and towns are bordered or surrounded by public lands. Finally, lands with prominent points are often found suitable for communication sites. Most of these are located on U.S. Forest Service or BLM administered lands.

Dependency also occurs in the political and social realm. Users have relied on public lands in the past and expect to continue to rely on these in the future. Potential applicants also feel that BLM has a special obligation to grant authorization since these are "public lands". In addition, most utility companies prefer to deal with just a few landowners to obtain easements, placing a greater dependency on large, single landowners such as BLM or the U.S. Forest Service.

PROPOSED RESOURCE MANAGEMENT PLAN (PREFERRED ALTERNATIVE)

The Proposed Plan would emphasize the management, production, and use of renewable resources on the majority of the public lands in the Kremmling Resource Area. Opportunities to provide sufficient suitable coal lands would be emphasized to allow for the continuation and possible expansion of the coal industry in Jackson County. Scattered tracts of public lands would be prioritized for disposal in the Grand Lake and Granby-Fraser areas to support their recreational and tourism-based economies.

Multiple use management would be directed toward providing a flow of renewable resources from the public lands on a sustained yield basis. In addition, management attention would be directed to the expansion of local and regional economies in areas where Bureau actions could influence orderly economic growth.

The goods and resources provided by the public lands would help meet local, regional, and national needs, including the national goal of energy self-sufficiency.

Individual resources would be managed or affected in the following ways:

Locatable Minerals

All Federal lands in the planning area would remain open to entry under provisions of the Mining Law of 1872 as amended, except that mineral entry would be excluded from those lands under protective withdrawal. Development and certain types of exploration could have site-specific or temporary restrictions imposed to protect other important resource values.

Coal

The Proposed Plan offers sufficient acreage (approximately 45,000 acres) for consideration for future coal leasing to allow for continuation and expansion of the coal industry in Jackson County. The priority areas for future coal leasing are located east of Walden in the area called the McCallum KRCRA, where coal development is currently taking place, and near Coalmont, where numerous coal leases presently exist and development previously occurred. (Refer to Preferred Alternative Map in the Draft RMP/EIS.) These priority areas were determined based on current coal inventory data and indications of interest by industry.

Those lands identified as unsuitable for surface mining after application of the coal unsuitability criteria (see Continuation of Present Management Alternative in this chapter) would be excluded from future coal leasing considerations.

The remaining coal lands that were not identified as a priority for future leasing would be managed for other multiple use considerations, i.e., as priority areas for oil and gas, livestock grazing, or wildlife habitat. These lands would be made available for future leasing only when the coal priority areas had been depleted or a significant demand was expressed that could not be met by the coal priority area. Significant changes in coal resource data, the

coal industry (e.g. expressions of interest) or the economy could also, at some future date, provide new information that warranted amendment of the plan to either expand or further limit the areas considered for coal leasing.

Preference Right Lease Application (PRLA) C-0125854 would be processed. A separate EIS on the PRLA has been prepared to determine specific conditions and mitigating measures for the lease. Further information on the PRLA is available from the Kremmling Office. Emergency coal leasing would continue as needed to support existing operating mines. Site-specific restrictions may be imposed to protect the environment or other critical resource values. These restrictions would become part of the lease or approved mine plan.

Oil and Gas

All Federal lands would remain open to oil and gas leasing. Site-specific restrictions to protect other resources would be imposed prior to leasing or exploration if another resource was shown to have a higher priority. This includes no surface occupancy stipulations for approximately 2,000 acres and timing or seasonal restrictions for an additional 166,000 acres. Where oil and gas is shown as the priority, standard lease stipulations would apply. Priority areas are shown on the Preferred Alternative Map in the Draft RMP/EIS.

Mineral Materials

Federal lands would provide mineral materials to meet demands not filled by private enterprise and would provide free materials to local, state, and Federal agencies for road maintenance and construction. Existing or previously used sites would be favored. Sand and gravel disposal would be excluded in intensively managed forestry areas, threatened and endangered plant and wildlife habitats, riparian or fisheries areas, sensitive watershed areas, water bird habitats, and special recreation management areas. Site-specific restrictions could be required to protect other resource values. These would be addressed prior to any mineral disposal.

Paleontological Resources

Fossils of scientific interest would be protected through limited management. Types of fossils and possible locations are identified in the Geology section of Chapter 2. Sites determined to be of significant value to Bureau programs or programs such as the Colorado Natural Areas program would be considered for special area designation (research natural area, area of critical environmental concern (ACEC), etc.). The Cretaceous Ammonite Site north of Kremmling would be designated as a Research Natural Area. Approximately 200 acres would be designated and managed for research and resource protection.

Water Resources

Surface Water

All streams on public lands in the resource area that met or exceeded state water quality standards (refer to Tables 3-23 and 3-24) and had acceptable channel stability would be maintained in their present condition through limited management. Streams not meeting state standards or having unstable channels would be improved to meet minimum standards through intensive management.

Groundwater

Groundwater would be protected to maintain its present good quality. This would be achieved by placing restrictions on activities that may penetrate into subterranean water. Toxins and other impurities would not be allowed to flow or leach into groundwater aquifers.

Sensitive Watersheds

Sensitive watersheds would be protected by placing restrictions on activities that may adversely affect them. Improvements to sensitive watersheds would be accomplished through intensive management practices initiated by other resource programs, such as range or forest management.

Livestock Grazing

Range forage would be allocated to optimize both livestock production and big game populations where feasible. In grazing allotments where optimizing for both was not possible, livestock production would be favored, while providing sufficient forage to support present (1980) big game populations. The initial forage allocations would be as follows:

Livestock: 39,726 AUMs.

Big game (Rocky Mountain elk, mule deer and pronghorn antelope): 26,191 AUMs.

In addition to forage allocation, all grazing allotments would be intensively managed. Intensive management is defined here as selecting or classi-

fying grazing allotments for management under one of three levels. (Refer to the Management Categories section of this chapter for a complete description.) The number of allotments within each level of management would be:

Management Level	Number of Allotments
1 (Maintain)	20-(Satisfactory Forage Condition)
2 (Improve)	76-(Unsatisfactory Forage Condition)
3 (Custodial)	215-(Small, Unconsolidated Allotments or Allotments Given Priority for Other Land Uses)

The 76 allotments that would be in Management Level 2 fall within the range priority use zones identified on the Preferred Alternative Map in the Draft RMP/EIS. These allotments comprise approximately 180,585 acres (or 51 percent of the public land under permit) and have been targeted to receive priority for increased management to improve forage production and condition. The overall effects of increased management would be a long-term increase in forage production to a level of 53,535 AUMs, with approximately 70 percent of the permitted public lands being brought into satisfactory condition.

Needed range improvements identified for implementing the proposed plan include 20 spring developments, 46 stock ponds, 14 wells, 4 miles of ditch, 18 miles of pipeline, 66 miles of fence, and approximately 45,200 acres of land treatment (brush control and reseeding) at an estimated cost of $854,300. Additional cost of implementation would include approx. $150,000 for project reconstruction and $48,000 for use supervision and allotment monitoring. Total projected cost for the proposed plan would be $1,052,300 dispersed over a 10 year period.

Appendix 4 contains a listing of all proposed projects by allotment for this alternative.

Forest Products

Intensive forest management would be applied to economically assessible, productive commercial forest lands that would be suitable for producing a variety of forest products on a sustained yield basis. Estimated forest acreage under intensive management would be 40,000 acres. The remaining forest lands would have limited management to maintain and protect the forest environment (60,000 acres).

The annual allowable cut for the resource area would be about the same as the present 4 to 5 million board feet. The exact allowable cut would be determined in 1987, using the new timber production and operations inventories. All the intensively managed forest lands are shown as priority areas on the Preferred Alternative Map in the Draft RMP/EIS.

Wildlife

Aquatic Wildlife

Streams with existing fisheries that have a significant portion of public lands would be intensively managed to provide more opportunities for recreational fishing. Approximately 53 miles of stream habitat are included in this category. All other fisheries habitats would have limited management to protect or maintain their present condition.

Terrestrial Wildlife

Wildlife habitat would be managed for optimum wildlife population levels as determined by the Colorado Division of Wildlife's Strategic Plan when conflicts with livestock did not exist. Population levels supported by public lands would be an estimated 10,528 deer, 3,224 elk, and 663 pronghorn. Emphasis would be placed on intensively managing critical and important wildlife habitats, with limited management on the rest of the areas. Included in the critical and important categories are 326,000 acres of upland, 3 miles of riparian, and 3,000 acres of wetland habitat. Areas where wildlife would have priority are shown on the alternative maps in the Draft RMP/EIS.

Threatened and Endangered Species

All threatened and endangered (T&E) plant and animal habitats would be protected as required. Uses or activities that endanger them would be excluded from the areas. The protection areas identified on the Preferred Alternative Map in the Draft RMP/EIS include the known T&E species habitats. Sites determined to be significant to programs such as the Colorado Natural Areas Program would be considered for special area designation (e.g., Research Natural Areas, ACECs, etc.).

Under the Proposed Plan the registered *Phacelia formosula* site would be designated as a Research Natural Area and maintained for the primary purpose of scientific study and education, since this

area harbors an endangered species. Approximately 300 acres would be so designated.

Visual Resources

Visual quality would be managed at the existing *limited management level for sensitive Class II* areas (those areas seen from major travel routes and adjacent to the intensively managed recreation area).

Recreation

The upper Colorado River (approximately 6,060 acres) and the North Sand Hills (roughly 1,400 acres) would continue to be managed as special recreation management areas (SRMAs). The upper Colorado River between Gore Canyon and State Bridge would be managed to provide and maintain floatboating opportunities and associated activities in a roaded natural setting. The proposed Azure Project would be compatible with the objectives of this alternative, provided the floatboating opportunities were maintained (both in terms of quality and quantity) below the project area, including Little Gore Canyon. The North Sand Hills would be managed to protect the cultural resources and the dune environment while allowing ORV use to continue in a roaded natural setting. The existing mineral withdrawal on the North Sand Hills would be retained, but the Natural Area designation would be changed to SRMA.

The remaining public lands in the resource area would receive limited management for dispersed recreation uses, such as hunting, hiking, and sightseeing.

Wilderness

This recommendation is preliminary and subject to administrative review. A final legislative Wilderness EIS will be developed for the Troublesome WSA. Upon completion of the administrative review and filing by the Secretary of the Interior, the EIS will be available for public review. Following release of the Wilderness EIS, the Secreatary will make his final recommendation to the President on the Troublesome WSA.

The Troublesome Wilderness Study Area (WSA) would be recommended as nonsuitable for wilderness designation. This recommendation is based on the following reasons, taken cumulatively:

When compared with other existing and potential wilderness areas in the region, the Troublesome has a very similar ecosystem and provides similar opportunities for solitude and primitive, unconfined recreation.

The area lacks any geologic, ecological, educational, scenic, or historical features significant enough to recommend their protection by wilderness designation. Because it is a relatively small area and other larger areas are abundant in the region, the Troublesome WSA is not a significant potential addition to the National Wilderness Preservation System on a regional, state, or national basis. It would not significantly expand wilderness opportunities within a day's driving time of major population centers and would not add balance to the geographic distribution of wilderness areas.

Since the adjoining national forest lands are not under wilderness management, the Troublesome WSA would not afford protection to an entire watershed or ecosystem, nor would it provide opportunities for a sustained wilderness experience. There are no significant multiple resource values, such as watershed, wildlife habitat, or archaeological sites, that would depend on wilderness preservation for their protection.

Finally, the nonwilderness management of adjoining national forest lands, especially those upstream, and the private inholding within the Troublesome WSA would not presently adversely affect the Bureaus ability to manage the area as wilderness; however, such management is subject to change.

When these reasons are evaluated on a cumulative basis, the Troublesome WSA is not considered a quality addition to the National Wilderness Preservation System and is recommended as nonsuitable for wilderness.

Public comments during the wilderness review process expressed a desire for further consideration of the WSA for wilderness if the U.S. Forest Service re-evaluates the adjoining National Forest lands in some future land use plan. BLM can evaluate wilderness potential under its general land use planning authority and would consider a joint study with the U.S. Forest Service at some future time if the public lands in the Troublesome area are still found to have wilderness characteristics.

The Troublesome WSA would be managed under the Bureau's interim management policies for wilderness study areas until completion of the wilderness review process. If the recommendation presented here is adopted, that the Troublesome WSA is nonsuitable, then the area would be managed for multiple use, with emphasis on livestock grazing and intensive forest management in the western portion of the area.

Cultural Resources

The Windy Gap Site area (700 acres) north of Granby, Colorado, and sites in the North Sand Hills (10 acres) are the only cultural areas currently identified as priority areas for intensive management in this plan. Two other sites containing about 80 acres might be intensively managed. A total of 8,000 acres have been identified for potential inventory; a potential six new National Register sites could result. The remaining cultural resource sites would be placed under limited management.

Lands and Realty

The lands and realty program would evaluate and process all use authorization applications, giving priority to those that enhanced or were consistent with the goals of this plan. In order to provide better overall land management, a program of ownership consolidation would be supported. Criteria for locating major linear rights-of-way would also be established.

Use Authorizations

Applications for use authorizations for small-scale, low impact actions would be processed and approved if:

1. Applications met the requirements under the law.
2. Placement on or use of public lands was the most suitable economically and environmentally.
3. Actions supported private or governmental needs on a local or regional basis.

Applications for use authorizations for major realty actions, such as dams, reservoirs, highways, transmission lines, etc., would be processed and approved if they met the three requirements for small-scale actions and did not adversely impact or conflict with existing uses or management of renewable resources.

Ownership Consolidation

The Bureau would process, initiate, and favor action for consolidation of ownership where overall land management would be improved. This could include boundary adjustments between state and Federal agencies; blocking of land patterns, including private, state, public, and other Federal lands; and resolution of split mineral estates. No acreage limitations would be placed on such actions.

Land considered for acquisition would include:

1. Inholdings of private, state, or other Federal land within large blocks of public lands
2. Land adjacent to intensively managed tracts of public land where overall program management would be enhanced, such as lands adjacent to special recreation management areas, intensively managed forest sites, grazing allotments, or important mineral areas
3. Lands of mineral importance where the Federal minerals are overlain by state or private surface ownerships

Public lands considered suitable for disposal would be:

1. Tracts in the Grand Lake, Granby, and Fraser areas that would support or enhance their recreational and tourism based economy
2. Inholdings within large blocks of state or other Federal lands
3. Public lands adjacent to large blocks of state or other Federal lands that would be best managed by that agency
4. Public lands overlying other mineral estates (state minerals, public surface)
5. Isolated tracts that:
   a. Have no important wildlife habitat values (winter range, nesting areas, mating areas, etc.)
   b. Are not within a sensitive watershed or riparian area
   c. Are in areas where Bureau initiated range management opportunities are limited because of size, isolation, and site potential
   d. Are lands where Bureau initiated forest management opportunities are limited because of tract size, stand size, access difficulties, or adverse sites
   e. Have no resource values of major significance
   f. Approximately, 18,700 acres of public land would be suitable for disposal under this plan.

Approximately 2,800 acres originally identified for disposal in the Preferred alternative of the DEIS have been deleted in the proposed plan and would be retained in federal ownership. The reason these lands were deleted is because more current policy guidance precluded the disposal of any public lands located within the boundaries of a Known Recover-

able Coal Resource Area, a Known Geologic Structure for oil and gas, or within a public water reserve (Refer to Appendix 9).

Approximately 4,600 additional acres have been identified for disposal in response to public comment and further analysis (Appendix 10: Ownership Consolidation-Additions or Changes From Draft RMP/EIS Disposal Areas). These additions are reflected in the total disposal acreage figure of 18,700 acres in the Proposed Plan.

A map entitled "Ownership Consolidation/Land Tenure" is included as part of the Proposed Plan, along with Appendices 9, 10, and 11 which describe deletions, additions, changes, and the Ptarmigan Small Tracts.

Major Linear Rights-of-Way

The placement of major linear rights-of-way, such as highways, pipelines, and transmission lines, would be dependent on meeting the following location criteria:

1. Concentrate linear facilities within or contiguous to existing corridors where possible.
2. Avoid locations that would take intensively managed forest land out of production.
3. Avoid locations that would cause harassment to livestock or wildlife concentration areas.
4. Avoid steep topography, poor soils, or other fragile areas, such as T&E habitats.
5. Avoid cultural sites that are on or eligible for the National Register of Historic Places.

Community Expansion

Areas near or adjacent to the towns of Kremmling and Granby have been identified for community expansion. These lands would be available through sale, exchange, lease, grant or patent to meet the development needs of these communities (Refer to Preferred Alternative Map in the Draft RMP/EIS).

Support Needs

In order to achieve the management objectives stated in this alternative, numerous support actions would be needed. This support would come from both within and outside the Bureau.

Realty Actions

Existing withdrawals that no longer fulfilled the purpose for which they were intended would be revoked so these lands could be opened to multiple use management.

Access would be acquired to intensive management areas that presently lack suitable access, such as intensively managed forest lands and SRMAs.

Transportation and Access

The present transportation system is adequate to accomplish the management goals of this alternative, with the exception of those types of areas identified below which would require access in order to be intensively managed. Access would be developed to enable multiple-use management of these areas. Following approval of the RMP, a transportation plan and map would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; site-specific access needs; off-road designations; and coordination with local, state, and Federal agencies' road programs.

In order to fulfill the management goals of this alternative, the following types of lands would require access:

Type of Public Land Needing Access	Approximate No. of Areas	Major Areas in this Type
1. Intensive management forest lands	15	Troublesome - East and West, Canyon Creek, Drowsy Water Creek, Smith Creek (T2N, R77W), Willow Creek, Muddy Pass/ Bear Mtn./Diamond Mtn./Ironclad Mtn./ Spicer Peak, Sheep Mtn., Bradfield Ditch
2. Special recreation management areas (SRMAs)	1	North Sand Hills, Upper Colorado River - State Bridge and Radium
3. Public lands with expressed public interest for access.	1	McFarlane Reservoir, Colorado River in Middle Park - Fishing access areas.
4. Energy and minerals exploration and development	5	Pitchpine Mtn., Fisher Draw/East Independence Mtn., Battleship Oil Field, N.W. of Battleship
5. Communications sites	1	San Toy Mtn.

Resource Protection

Increased Bureau monitoring of uses and activities would be required. Cooperative agreements would be developed with local law enforcement agencies to provide needed patrols, surveillance, and law enforcement.

Cadastral

Surveys would be required in areas presently lacking adequate boundary surveys and controls of public lands. Priority would be given to those areas most likely to experience development, such as energy areas, forest management areas, areas scheduled for exchange, and areas of expanding human development (adjacent to towns or resorts).

Water Rights

The Bureau would file for water rights on those waters necessary to achieve the objective of this plan, such as springs and well waters for livestock and wildlife.

Fire

Fire protection would be provided to most of the public lands in the resource area. Priority for initial attack would be those areas or resources of high value that may be damaged by or lost to fire, such as townsites, personal property, historic structures, forested areas, developed recreational sites, and critical habitats. Areas may be identified where fire would be allowed to burn to achieve management objectives. These areas would be identified site specifically in management prescriptions and would require fewer, if any, suppression efforts.

Fire Management

Fire may be used as a tool to achieve resource management objectives, such as vegetation manipulation, site preparation, and control of insects and disease. Specific treatment areas would be identified in subsequent activity plans. Controlled burning would comply with all air quality maintenance requirements.

Off-Road Vehicles (ORVs)

All public lands would be designated as open, limited, or closed to ORV use (as shown on the map for the Preferred alternative in the Draft RMP/EIS). Information and supervision would be provided for limited and closed areas.

Designations would be based on protecting public lands resources (e.g., soil, watershed, vegetation, and wildlife) and minimizing conflicts among various uses of the public lands. Designations would be made in accordance with the criteria set forth in 43 CFR Part 8340. Under the Proposed Plan 12 percent of the public lands in the resource area would be subject to restrictions, with the remaining 88 percent being open (i.e., not subject to restrictions). See the Preferred alternative map in the draft RMP/EIS and Appendix 7 for a description of these designations.

Should the Kremmling Area Manager and Craig District Manager determine that ORVs are causing or would cause considerable adverse effects on public lands resources, they would use their authority under 43 CFR 8341.2 to immediately close or restrict ORV use in the affected area.

Outside Coordination Needs

BLM would coordinate timber harvesting and forest development projects with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, the U.S. Forest Service and the State of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations and potential grazing management systems.

ENERGY AND MINERALS ALTERNATIVE

The Energy and Minerals Alternative would emphasize the exploration development and transportation of energy, energy minerals, and critical minerals resources. Multiple use management would be directed toward providing timely Bureau actions and support necessary to help meet national needs for energy, critical minerals, and energy self-sufficiency. (Refer to the Energy and Minerals Alternative Map in the Draft RMP/EIS.

Individual resources would be managed in the following ways:

Locatable Minerals

All Federal lands would remain open to entry under provisions of the Mining Law of 1872, as amended, except those lands under protective withdrawal. Areas having the greatest potential for possible development and identified as priority use areas on the Energy and Minerals Alternative Map in the draft RMP/EIS would be committed to the exploration and development of locatable minerals. Limited reductions necessary to protect environmental values and maintain minimum standards would be applied to surface uses of the priority areas. The remaining Federal lands not identified as priority areas could have additional limitations placed on surface use in order to protect resources having potential for energy development. Where no significant mineral potential was identified, surface use could also be restricted.

Coal

All Federal coal lands in the McCallum Known Recoverable Coal Resource Area (KRCRA), plus those lands in T9N, R78W outside the KRCRA boundary and west of the Canadian River (identified by industry), would be suitable for future consideration for coal leasing (approximately 60,000 acres). Those lands in the KRCRA that have been identified as priority areas for oil and gas development (refer to Energy and Minerals Alternative Map) and those lands identified as unsuitable for surface mining after application of the coal unsuitability criteria would be excluded from coal leasing considerations. Preference Right Lease Application (PRLA) C-0125854 would be processed and coal leasing would continue as needed to support existing operating mines. Site-specific restrictions may be imposed to protect the environment or other critical resource values. Restrictions would become part of the lease or approved mine plan.

This alternative offers sufficient acreage for coal leasing considerations to allow for expansion of the coal industry in Jackson County.

Oil and Gas

All Federal lands in the resource area would remain open to oil and gas leasing. Those areas having the greatest potential for development and identified as priority use areas on the Energy and Minerals Alternative Map would be committed to the exploration and development of oil and gas resources. The standard lease stipulations would be applied to these areas.

On remaining Federal lands not identified as priority areas but open to leasing, additional stipulations could be required to protect resources identified as having a greater potential for contributing to the economic benefit of the resource area. However, this alternative places the greatest emphasis on the exploration for, and development of, oil and gas.

Mineral Materials

Federal lands would provide mineral materials to meet demands of the energy and minerals industry not filled by private enterprise and would provide free materials to local, state, and Federal agencies for road maintenance and construction. Existing or previously used sites would be favored. Sand and gravel disposal would be excluded from threatened and endangered plant and wildlife habitats, riparian or fisheries areas, sensitive watershed areas, and water bird habitats. Site-specific restrictions may be required to protect other resource values. They would be addressed prior to any mineral disposal.

Paleontological Resources

Fossils of scientific interest would be protected through limited management. Types of fossils and possible locations are identified in the Geology section of Chapter 2.

Water Resources

Surface Water

All streams on public lands in the resource area that met or exceeded state water quality standards and had acceptable channel stability would be maintained in their present condition through limited management.

Streams not meeting state standards or having unstable channels would be improved to meet minimum standards through intensive management.

Groundwater

Groundwater would be protected to maintain its present good quality. This would be achieved by placing restrictions on activities thay may penetrate

into subterranean water. Toxins and other impurities would not be allowed to flow or leach into groundwater aquifers.

Sensitive Watersheds

Sensitive watersheds would be protected by placing restrictions on activities that may adversely affect them. Improvements to sensitive watersheds would be accomplished through intensive watershed management practices.

Livestock Grazing

Forage would be allocated to optimize livestock production while allocating forage to sustain big game populations at only half of their present (1980) levels. Forage would be initially allocated as follows:

Livestock: 52,652 AUMs

Big game (Rocky Mountain elk, mule deer, and pronghorn antelope): 13,150 AUMs.

Four grazing allotments would continue to be managed under existing allotment management plans (AMPs), these include 7568, 7031, 7250, and 7252. These allotments cover approximately four percent (14,120 acres) of the public lands and account for 1,621 total AUMs (as adjusted from the range condition inventory/monitoring studies). The construction and maintenance of range improvements would continue as a priority to meet the range, wildlife, and watershed objectives outlined in the AMPs. Monitoring studies would also continue as a priority in evaluating the effectiveness of the plans.

In addition to the management on existing AMPs, other opportunities for consolidating management with other agencies would be developed as opportunities arise. This could include, for example, BLM, the Colorado State Land Board, U.S. Forest Service, and private lands being consolidated under a comprehensive ranch plan designed with the assistance of the Soil Conservation Service.

The remaining 307 grazing allotments in the resource area would remain under nonintensive management, licensed under the constraints of existing individual term permits and leases. Requested changes in permits, such as changes in season of use or class of livestock and adjustments in percent Federal range, would be considered on an individual basis. The construction of new range improvement projects would be authorized on a case-by-case basis, with priority given to those that would enhance grazing distribution.

New projects would continue to be authorized in the following order of priority:

1. Water developments
2. Allotment boundary fencing
3. Allotment interior fencing
4. Vegetation manipulations (limited)
5. Other management facilities (corrals, trails, etc.)

Allotment monitoring studies would also receive a high priority in order to further refine the initial allocation levels as interpreted from the 1980 range condition survey. The kinds of monitoring studies conducted on a regular basis would include utilization, climate, and actual use. Allotments containing large tracts of public land would be given first priority for monitoring. These allotments would be further prioritized in the following descending order for evaluation:

1. Allotments receiving forage allocation *reductions*
2. Allotments receiving forage allocation *increases*
3. Allotments receiving neither forage allocation increases or decreases.

Allotments would also be checked for grazing use compliance in the above-described order of priority.

Generally, overall forage production and condition would be expected to decrease over the long term due to the type of management prescribed. The overall affect would be a decrease in forage production from the established level of 52,625 AUMs to a level of 48,754 AUMs.

Forest Products

Intensive forest management would be applied to all productive commercial forest lands (50,000 acres) to produce forest products on a sustained yield basis. Remaining forested lands would be placed under limited management to maintain and protect the forest environment (50,000 acres). The annual allowable cut for the resource area would remain at its current 5 million board feet until the allowable cut is recomputed in 1987.

All the intensively managed forested lands are shown as a priority on the Energy and Minerals Alternative Map.

Wildlife

Aquatic Wildlife

All streams with existing fisheries or fisheries potential and in fair or poor SHIP class would have limited management applied to them to improve their present condition.

Terrestrial Wildlife

Wildlife habitats would be managed to support populations at or below their present (1980) levels. Forage would be allocated on public lands to support some 7,000 mule deer, 960 elk and 410 antelope. All critical wildlife habitats (identified on inventory information available at the Kremmling Resource Area Office) would be protected. Roughly 225,000 acres of upland habitat and 1,000 acres of wetland habitat would be managed. Priority wildlife areas are portrayed on the Energy and Minerals Alternative Map.

Threatened and Endangered Species

All threatened and endangered (T&E) plant and animal species habitats would be protected as required. Uses or activities that endanger them would be excluded. Protection areas identified on the Energy and Minerals Alternative Map include the known T&E species habitats.

Visual Resources

Visual quality would be managed at the existing limited management level for sensitive Class II areas (those areas seen from the major travel routes and adjacent to the intensively managed recreation areas).

Recreation

The upper Colorado River (approximately 6,060 acres) and the North Sand Hills (roughly 1,400 acres) would continue to be managed as special recreation management areas (SRMAs). The upper Colorado River between Gore Canyon and State Bridge would be managed to provide and maintain floatboating opportunities and associated activities in a roaded natural setting. The proposed Azure Project, especially the hydroelectric aspects, would be compatible with the objectives of this alternative, provided floatboating opportunities were maintained below the project area, including Little Gore Canyon.

The North Sand Hills would be managed to protect cultural resources and the dune environment while allowing ORV use in a roaded natural setting. The existing mineral withdrawal on the North Sand Hills would be retained, but the Natural Area designation would be changed to SRMA.

In addition, approximately 6,000 acres of the upper Troublesome WSA would be designated as an SRMA and 'managed for primitive and backcountry recreation opportunities. Motorized access would be allowed to enter the western or southwestern portion of the unit, depending on the location of public access. The reason this area would be identified as an SRMA is to recognize recreation as a principal management objective in response to projected increases in demand for backcountry types of recreation in the future. This would allow BLM to make major investments in both facilities and visitor assistance in this area to deal with increases in use.

The remaining public lands in the resource areas would receive limited management for dispersed recreational uses, such as hunting, hiking, and sightseeing.

Wilderness

The Troublesome Wilderness Study Area (WSA) would be recommended as not suitable for wilderness designation. See discussion of suitability recommendation under Continuation of Present Management Alternative.

Cultural Resources

Known cultural resource sites would be protected from damage or loss through limits or restrictions placed on surface disturbing activities. The Windy Gap site north of Granby, Colorado, and sites in the North Sand Hills (10 acres) are the only cultural areas identified as priority areas for intensive management in this alternative. Four other sites containing roughly 1,000 acres may be intensively managed. A total of 4,000 acres may be inventoried, with the possibility that three new National Register sites could be added. Remaining sites would be placed under limited management.

Lands and Realty

The lands and realty program would evaluate and process all use authorization applications, giving priority to those that encouraged, facilitated, or supported energy and mineral exploration, development, and transportation.

In order to provide better overall land management, a program of ownership consolidation would be supported. Criteria for locating major linear rights-of-way would also be established.

Use Authorizations

Applications for use authorizations for small-scale, low impact actions would be processed and approved if:

1. Applications met the requirements under the law.
2. Placement on or use of public lands was the most suitable economically and environmentally.
3. Applications supported private or governmental needs on a local or regional basis.

Applications for use authorizations for major realty actions, such as dams, reservoirs, highways, transmission lines, etc., would be processed and approved if they met the three requirements for small-scale actions and either supported the objectives of this alternative or did not conflict with the development or transportation of important energy or mineral resources.

Ownership Consolidation

The Bureau would process, initiate, and favor action for the consolidation of ownership where overall land management would be improved. This could include boundary adjustments between state and Federal agencies; blocking of land patterns, including private, state, public, and other Federal lands; and resolution of split mineral estates. No acreage limitations would be placed on such actions.

Lands considered for acquisition would include:

1. Inholdings of private, state, or other Federal land within large blocks of public lands
2. Land adjacent to intensively managed tracts of public land where overall program management would be enhanced, such as lands adjacent to special recreation management areas, intensively managed forest sites, grazing allotments, or important mineral areas
3. Lands of mineral importance where the Federal minerals are overlain by state or private surface ownerships

Public lands considered suitable for disposal would include isolated tracts that:

1. Have no mineral values
2. Have no resource values of major significance (T&E species, National Historic Register sites)
3. Are not necessary to support the production and transportation of energy and minerals (key access or right-of-way points)

Also considered for disposal would be:

1. Inholdings within large blocks of state or other Federal lands
2. Public lands adjacent to large blocks of state or other Federal lands that would be best managed by that agency
3. Public lands overlying other mineral estates (state minerals, public surface)
4. Lands necessary to support growth associated with mineral development (community expansion, etc.)
5. Potentially, 12,000 acres of public land would be suitable for disposal under this alternative. A map depicting disposal parcels is available for inspection in the Kremmling office.

Major Linear Rights-of-way

The placement of major linear rights-of-way, such as highways, pipelines, and transmission lines, would be dependent on meeting several location criteria. The Bureau would encourage the location of linear facilities to best meet the needs of efficient development and transportation of energy and mineral resources while meeting required environmental safeguards. Linear facilities would be located within or contiguous to existing corridors where possible. Steep topography, poor soils, or other fragile areas, such as T&E habitats, would be avoided.

Support Needs

In order to achieve the management objectives stated in this alternative, numerous support actions would be needed. This support would come both from within and outside the Bureau.

Realty Actions

Existing withdrawals that no longer fulfilled the purpose for which they were intended would be revoked so lands could be opened to multiple use management.

Transportation and Access

The present transportation system is adequate to accomplish the management goals of this alternative, with the exception of those areas identified below which would require access in order to be intensively managed. Following the RMP, a transportation plan and maps would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; off-road designation; and coordination with local, state, and Federal agencies' road programs.

In order to fulfill the management goals of this alternative, the following types of lands would require access:

Type of Public Land Needing Access	Approximate No. of Acres	Major Areas in this Type
1. Intensive management forest lands	45	Canyon Creek, Sheep Mountain, South Bull Mountain, Drowsy Waters, Numerous Small Tracts
2. Special recreation management areas (SRMAs)	2	Troublesome, North Sand Hills
3. Large blocks of public lands with expressed public interest for access	0	

Cadastral

Surveys would be required in areas presently lacking adequate boundary surveys and controls of public lands. Priority would be given to those areas most likely to experience development, such as energy areas, forest management areas, areas scheduled for exchange, and areas of expanding human development (adjacent to towns or resorts).

Water Rights

The Bureau would file for water rights on those waters necessary to achieve the objectives of this alternative, such as springs and well waters for livestock and wildlife, and other water uses necessary to achieve management objectives.

Fire

Fire protection would be provided to most of the public lands in the resource area. Priority for initial attack would be those areas or resources of high value that may be damaged by or lost to fire, such as townsites, personal property, historic structures, forested areas, recreational sites, and critical habitats. Areas may be identified where fire would be allowed to burn to achieve management objectives. These areas would be identified site specifically in management prescriptions and would require fewer, if any, suppression efforts.

Fire Management

Fire may be used as a tool to achieve resource management objectives, such as vegetation manipulation, site preparation, and control of insects and disease. Specific treatment areas would be identified in subsequent activity plans. Controlled burning would comply with all air quality maintenance requirements.

Off-Road Vehicles (ORVs)

All public lands would be designated as open, limited, or closed to ORV use (as shown on the map for this alternative in the draft RMP/EIS). Information and supervision would be provided in limited and closed areas.

Designations would be based on protecting public lands resources (e.g., soil, watershed, vegetation, and wildlife), promoting safety for all users of public lands, and minimizing conflicts among various uses of the public lands. Designation would be made in accordance with the criteria set forth in 43 CFR Part 8340. Under this alternative, seven percent of the public lands in the resource area would be subject to limitations, while the remaining 93 percent would remain open (i.e., not subject to restrictions). See the Energy and Minerals Alternative Map in the draft RMP/EIS and Appendix 7 for a description of these designations.

Should the Kremmling Resource Area Manager and Craig District Manager determine that ORVs are causing or would cause considerable adverse effects on public lands resources, they would use their authority under 43 CFR 8341.2 to immediately close or restrict ORV use in the affected area.

Outside Coordination Needs

BLM would coordinate timber harvesting and forest development projects with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, U.S. Forest Service, and State of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations.

The Bureau would coordinate all surface mining with the Colorado Mined Land Reclamation Board and surface coal mining with the U.S. Office of Surface Mining.

ECONOMIC BENEFIT ALTERNATIVE

The Economic Benefit Alternative would emphasize providing economic benefits to the local and regional economy. Multiple use management would be directed toward the production of goods and services on the public lands within the Kremmling Resource Area to meet expected local and regional demands. Those resources whose use and development best contributed to the employment and income of local residents and that benefited both local and regional economies would be emphasized. Economic diversification would be encouraged and opportunities for local and regional economic expansion would be provided. (Refer to Economic Benefit Alternative Map in the Draft RMP/EIS)

Individual resources would be managed or affected in the following ways:

Locatable Minerals

All Federal lands in the planning area would remain open to entry under provisions of the Mining Law of 1872 as amended, except those lands under protective withdrawal. Lands under protective withdrawal would be excluded from mineral entry. Development and certain types of exploration could have site-specific or temporary restrictions imposed to protect other important resource values.

Coal

This alternative offers the greatest amount of acreage (roughly 107,000 acres) for consideration for future coal leasing and the greatest potential for expansion of the coal industry in Jackson County. All Federal coal lands (refer to Economic Benefit Alternative Map in the Draft RMP/EIS) in the McCallum Known Recoverable Coal Resource Area (KRCRA), plus those lands in T9N, R78W outside of the KRCRA boundary and west of the Canadian River (identified by coal industry), would be suitable for future consideration for coal leasing. Only those lands identified as unsuitable for surface mining after application of the coal unsuitability criteria (report on file in the Kremmling Resource Area Office) would be excluded from future coal leasing considerations.

Preference Right Lease Application (PRLA) C-0125854 would be processed and emergency coal leasing would continue as needed to support existing operating mines. Site-specific restrictions may be imposed to protect the environment or other critical resource values. These restrictions would become part of the lease or approved mine plan.

Oil and Gas

All Federal lands in the resource area would remain open to oil and gas leasing. Those areas having the greatest potential for development and identifed as priority use areas on the Economic Benefit Alternative Map would be committed to the exploration and development of oil and gas resources. The standard lease stipulations would be applied to these areas.

On remaining Federal lands not identified as priority areas but open to leasing, additional stipulations could be required to protect resources identified as having a greater potential for contributing to the economic benefit of the resource area.

Mineral Materials

Federal lands would provide mineral materials to meet demands not filled by private enterprise and would provide free materials to local, state, and Federal agencies for road maintenance and construction. Existing or previously used sites would be favored. Sand and gravel disposal would be excluded from intensively managed forestry areas, threatened and endangered plant and wildlife habitats, riparian or fisheries areas, sensitive watershed

areas, water bird habitats, and special recreation management areas. Site-specific restrictions may be required to protect other resource values. They would be addressed prior to any mineral disposal.

Paleontological Resources

Fossils of scientific interest would be protected through limited management. Types of fossils and possible locations are identified in the Geology section of Chapter 2.

Water Resources

Surface Water

All streams on public lands in the resource area that met or exceeded state water quality standards and had acceptable channel stability would be maintained in their present condition through limited management.

Streams not meeting state standards or having unstable channels would be improved to meet minimum standards through intensive management.

Groundwater

Groundwater would be protected to maintain its present good quality. This would be achieved by placing restrictions on activities that may penetrate into subterranean water. Toxins and other impurities would not be allowed to flow or leach into groundwater acquifers.

Sensitive Watersheds

Sensitive watersheds would be protected by placing restrictions on activities that may adversely affect them. Improvements to sensitive watersheds would be accomplished through intensive management practices initiated by other resource programs, such as range or forest management.

Livestock Grazing

Forage would be allocated to optimize livestock production while allocating forage to sustain big game populations at only half of their present (1980) levels. The initial forage allocations would be as follows:

Livestock: 52,652 AUMs.

Big game (Rocky Mountain elk, mule deer and pronghorn antelope): 13,150 AUMs.

In addition to forage allocation, all grazing allotments would be intensively managed. Intensive management is defined here as selecting or classifying grazing allotments for management under one of three levels. (Refer to the Management Categories section in this chapter for a complete description of the management levels.) The number of allotments occurring within each level of management would be:

Level 1	Number of Allotments
1 (Maintain)	11-(Satisfactory Forage Condition)
2 (Improve)	63-(Unsatisfactory Forage Condition)
3 (Custodial)	237-(Small, Unconsolidated Allotments or Allotments Given Priority for Other Land Uses)

The 63 allotments that would be in Management Level 2 fall within the range priority use zones identified on the Economic Benefit Alternative Map. These allotments comprise approximately 160,038 acres (or 45 percent of the public land under permit) and have been targeted to receive priority for increased management in order to improve forage production and condition. Under this alternative, the overall effects of increased management would result in a long-term increase in forage production to a level of 65,531 AUMs and bring approximately 65 percent of the permitted public lands into satisfactory condition.

Needed range improvements identified for implementing this alternative include 17 spring developments, 38 stock ponds, 12 wells, 4 miles of ditch, 15 miles of pipeline, 52 miles of fence, and approximately 35,200 acres of land treatment (brush control and reseeding) at an estimated cost of $683,500. Additional costs of implementation would include approx. $150,000 for project reconstruction and $40,000 for use supervision and allotment monitoring. Total projected cost for the alternative would be $873,500 dispersed over a 10 year period.

Appendix 4 contains a listing of all proposed projects by allotment for this alternative.

Forest Products

Intensive forest management would be applied to all productive commercial forest lands (50,000 acres) to produce forest products on a sustained yield basis. The remaining forest lands would be

placed under limited management to maintain and protect the forest environment (50,000 acres). The annual allowable cut for the resource area would remain at its current 4 to 5 million board feet until the cut was recomputed in 1987. Since 10,000 acres of economically inaccessible lands would be considered manageable, the cut would be expected to increase. All the intensively managed forested lands are shown as a priority area on the Economic Benefit Alternative Map.

Wildlife

Aquatic Wildlife

All streams in poor SHIP class and/or declining riparian trend with existing fisheries or fisheries potential on public lands would have limited management applied to them to protect or maintain their present condition. Eight miles of stream and 3 miles of riparian habitat would be included.

Terrestrial Wildlife

Wildlife habitats would be managed to support populations at or below their present (1980) levels. Forage would be allocated on public lands to support some 7,000 mule deer, 960 elk and 410 antelope. Intensive management would be applied to 225,000 acres of upland habitat and 1,000 acres of wetland habitat. Priority would be placed on protecting all critical wildlife habitats (identified on inventory information available at the Kremmling Resource Area Office).

Threatened and Endangered Species

All threatened and endangered (T&E) plant and animal species habitats would be protected as required. Uses or activities that endanger them would be excluded. The protection areas identified on the Economic Benefit Alternative Map include known T&E species habitats.

Visual Resources

Visual quality would be managed at the existing limited management level for sensitive Class II areas (those areas seen from the major travel routes and adjacent to the intensively managed recreation area).

Recreation

The Upper Colorado River (roughly 6,060 acres) and the North Sand Hills (approximately 1,400 acres) would continue to be managed as special recreation management areas (SRMAs). The Upper Colorado River between Gore Canyon and State Bridge would be managed to provide and maintain floatboating opportunities and associated activities in a roaded natural setting. The proposed Azure Project would be compatible with the objectives of this alternative, provided the floatboating opportunities were maintained below the project area, including Little Gore Canyon.

The North Sand Hills would be managed to protect the cultural resources and the dune environment while allowing ORV use in a roaded, natural setting. The existing mineral withdrawal on the North Sand Hills would be retained, but the Natural Area designation would be changed to SRMA.

New SRMAs would be established in the Middle Park area, where intensive management and public investment would be required to maintain, protect, or enhance areas with the potential to meet projected long-term demands. The areas in Middle Park that would be considered for future SRMA designation are Dice Hill (5,200 acres), Strawberry (6,020 acres), Troublesome (6,000 acres), and the Black Mountain-Drowsy Water complex (18,940 acres). Recreation management objectives, while designed to maintain the current type of recreation opportunities, would have to be compatible with the management emphasis on forestry and range. The reason these potential SRMAs have been identified is to recognize recreation as a principal management objective in response to projected increases in demand for specific types of recreation in the future. This would allow BLM to make major investments in both facilities and visitor assistance in these areas to deal with increases in demand and use.

The remaining public lands in the resource area would receive limited management for dispersed recreational uses, such as hunting, hiking, and sightseeing.

Wilderness

The Troublesome Wilderness Study Area (WSA) would be recommended as not suitable for wilderness designation. See discussion of suitability recommendation under Continuation of Present Management alternative.

Cultural Resources

The Windy Gap Site area (700 acres) north of Granby, Colorado, and sites in the North Sand Hills (10 acres) are the only cultural areas identified as priority areas for intensive management in this alternative. Five other sites containing roughly 1,340 acres may be intensively managed. A total of 4,000 acres may be inventoried, with the possibility of four new National Register sites being added. The remaining cultural resource sites would be placed under limited management.

Lands and Realty

The lands and realty program would evaluate and process all use authorization applications, giving priority to those that enhanced or were consistent with the goals of this alternative. In order to provide better overall land management, a program of ownership consolidation would be supported. Criteria for locating major linear rights-of-way would also be established.

Use Authorizations

Applications for use authorizations for small-scale, low impact actions would be processed and approved if:

1. Applications met the requirements under the law.

2. Placement on or use of public lands was the most suitable economically and environmentally.

3. Applications supported private or governmental needs on a local or regional basis.

Applications for use authorizations for major realty actions, such as dams, reservoirs, highways, transmission lines, etc., would be processed and approved if they met the three requirements for small-scale actions and did not adversely impact or conflict with existing uses of ecomomic importance to the area and region.

Ownership Consolidation

The Bureau would process, initiate, and favor action for the consolidation of ownership where overall land management would be improved. This could include boundary adjustments between state and Federal agencies; blocking of land patterns, including private, state, public and other Federal lands; and resolving split mineral estates. No acreage limitations would be placed on such actions.

Land considered for acquisition would include:

1. Inholdings of private, state, or other Federal land within large blocks of public lands

2. Land adjacent to intensively managed tracts of public land where overall program management would be enhanced, such as lands adjacent to special recreation management areas, intensively managed forest sites, grazing allotments, or important mineral areas

3. Lands of mineral importance where the Federal minerals are overlain by state or private surface ownerships

Public lands considered suitable for disposal would include isolated tracts that:

1. Have no potential for reasonable access

2. Have potential to support recreational or tourism needs in East Grand County

3. Have no resource value of major significance

Also considered for disposal would be:

1. Inholdings within large blocks of state or other Federal lands

2. Public lands adjacent to large blocks of state or other Federal lands that would be best managed by that agency

3. Public lands overlying other mineral estates (state minerals, public surface)

4. Lands necessary to support growth associated with mineral development (community expansion, etc.)

5. Approximately, 16,700 acres of public land would be suitable for disposal under this alternative. A map depicting disposal parcels is available for inspection in the Kremmling office.

Major Linear Rights-of-Way

The placement of major linear rights-of-way, such as highways, pipelines, and transmission lines, would be dependent on meeting several location criteria. The Bureau would encourage the location of linear facilities that would result in minimal cost to the applicant and maximum revenue returned. Linear facilities would be located within or contiguous to existing corridors where possible. Steep topography, poor soils, or other fragile areas, such as T&E habitats, would be avoided. The Bureau would seek to avoid placement of facilities that would detract from economic growth of a particular revenue-

producing resource (such as an intensive forest management area or special recreation management area). Finally, applicants would be asked to avoid cultural sites that are on or eligible for the National Register of Historic Places.

Community Expansion

Areas near or adjacent to the towns of Kremmling and Granby have been identified for community expansion. These lands would be available through sale, exchange, lease, grant, or patent to meet the development needs of these communities.

Support Needs

In order to achieve the management objectives stated in this alternative, numerous support actions would be needed. This support would come both from within and outside the Bureau.

Realty Actions

Existing withdrawals that no longer fulfilled the purpose for which they were intended would be revoked so these lands could be opened to multiple use management; this procedure would apply to natural areas as well as others.

Transportation and Access

The present transportation system is adequate to accomplish the management goals of this alternative, with the exception of those areas identified below which would require access in order to be intensively managed. Following the RMP, a transportation plan and map would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; off-road designation; and coordination with local, state, and Federal agencies' road programs.

In order to fulfill the management goals of this alternative, the following types of lands would require access:

Cadastral

Surveys would be required in areas presently lacking adequate boundary surveys and controls of public lands. Priority would be given to those areas most likely to experience development, such as energy areas, forest management areas, and areas of expanding human development (adjacent to towns or re sorts).

Type of Public Land Needing Access	Approximate No. of Acres	Major Areas in this Type
1. Intensive management Forest Lands	45	Troublesome, Sheep Mountain, South Bull Mountain, Canyon Creek, Numerous Small Tracts
2. Special recreation management areas (SRMAs)	2	North Sand Hills, Drowsy Water
3. Large blocks of public lands with expressed public interest for access	1	McFarlane Reservoir

Water Rights

The Bureau would file for water rights on those waters necessary to achieve the objective of this alternative, such as springs and well waters for livestock, wildlife, or mineral development.

Fire

Fire protection would be provided to most of the public lands in the resource area. Priority for initial attack would be those areas or resources of high value that may be damaged by or lost to fire, such as townsites, personal property, historic structures, forested areas, recreational sites, and critical habitats. Areas may be identified where fire would be allowed to burn to achieve management objectives. These areas would be identified site specifically in management prescriptions and would require fewer, if any, suppression efforts.

Fire Management

Fire may be used as a tool to achieve resource management objectives, such as vegetation manipulation, site preparation, and control of insects and disease. Specific treatment areas would be identified in subsequent activity plans. Controlled burning would comply with all air quality maintenance requirements.

Off-Road Vehicles (ORVs)

All public lands would be designated as open, limited, or closed to ORV use (as shown on the map for this alternative in the draft RMP/EIS). Information and supervision would be provided in limited and closed areas. Designations would be based on protecting the resources on public lands (e.g., soil, watershed, vegetation, and wildlife) and minimizing conflicts among various uses of the

public lands. Designations would be made in accordance with the criteria set forth in 43 CFR Part 8340. Under this alternative, 11 percent of the public lands in the Kremmling Resource Area would be subject to limitations; the remaining 89 percent would remain open (i.e., not subject to restrictions). See the Economic Benefit alternative map in the draft RMP/EIS and Appendix 7 for a description of these designations.

Should the Kremmling Area Manager and Craig District Manager determine that ORVs are causing or would cause considerable adverse effects on other resources, they would use their authority under 43 CFR 8341.2 to immediately close or restrict ORV use in the affected area.

Outside Coordination Needs

BLM would coordinate timber harvesting and forest development projects with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, the U.S. Forest Service, and the State of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations and potential grazing management systems.

RENEWABLE RESOURCES ALTERNATIVE

This alternative would emphasize the multiple use management of renewable resources on a sustained yield basis to meet local, regional, and national needs. The renewable resources which traditionally support the local economy would be favored. Although all renewable resources are favored, nonrenewable resource uses would be continued to sustain existing industry's demands. This alternative would come closest to present management since traditional uses of resources would continue; the most important change would be in the level of intensive management. (Refer to the Renewable Resources Alternative Map in the Draft RMP/EIS)

Individual resources or resource programs would be managed or affected in the following ways:

Locatable Minerals

All Federal lands in the planning area would remain open to entry under provisions of the Mining Law of 1872, as amended, except that mineral entry would be excluded from lands under protective withdrawal. Development and certain types of exploration may have site-specific or temporary restrictions imposed to protect other important resource values.

Coal

Emphasis on leasing Federal coal would continue as needed to support existing operating mines. Approximately 13,000 acres would be made available for leasing. Site-specific reductions would be imposed to protect the environment or other critical resource values. These reductions would become part of the lease on approved mine plans. Preference Right Lease Application (PRLA) C-0125854 would be processed.

Those lands identified as unsuitable for surface mining after application of the unsuitability criteria and those lands identified as priority areas for wildlife, livestock grazing, or oil and gas within the known recoverable coal resource area (KRCRA) would be excluded from future coal leasing consideration.

Oil and Gas

All Federal lands would remain open to oil and gas leasing. Site-specific restrictions to protect other resources would be imposed prior to leasing or exploration where another resource was shown as having a higher priority. Where oil and gas was shown as having priority, standard lease stipulations would apply. Priority areas are shown on the alternative map.

Mineral Materials

Federal lands would provide mineral materials to meet demands not filled by private enterprise and would provide free materials to local, state, and Federal agencies for road maintenance and construction. Existing or previously used sites would be favored. Sand and gravel disposal would be excluded from intensively managed forestry areas, threatened and endangered plant and wildlife habi-

tats, riparian or fisheries areas, sensitive watershed areas, water bird habitats, and special recreation management areas (SRMAs). Site-specific restrictions may be required to protect other resource values. They would be addressed prior to any mineral disposal.

Paleontological Resources

Fossils of scientific interest would be protected through limited management. Types of fossils and possible locations are identified in the Geology section of Chapter 2. Sites determined to be of significant value to Bureau programs or programs such as the Colorado Natural Areas program would be considered for special area designation (e.g., research natural area, ACEC, etc.).

Under this alternative, the Cretaceous Ammonite site north of Kremmling would be designated as an ACEC to protect significant paleontological resources. Approximately 200 acres would be designated.

Water Resources

Surface Water

All streams on public lands in the resource area that met or exceeded state water quality standards and had acceptable channel stability would be maintained in their present condition through limited management.

Streams not meeting state standards or having unstable channels would be improved to meet minimum standards through intensive management.

Groundwater

Groundwater would be protected to maintain its present good quality. This would be achieved by placing restrictions on activities that may penetrate into subterranean water. Toxins and other impurities would not be allowed to flow or leach into groundwater aquifers.

Sensitive Watersheds

Sensitive watersheds would be protected by placing restrictions on activities that may adversely affect them. Improvements to sensitive watersheds would be accomplished through intensive management practices initiated by other resource programs, such as range or forest management.

Livestock Grazing

Range forage would be allocated to optimize both livestock production and big game populations where feasible. In grazing allotments where optimizing for both was not possible, livestock production would be favored, while providing sufficient forage to support present (1980) big game populations. The initial forage allocations would be as follows:

Livestock: 39,726 AUMs

Big game (Rocky Mountain elk, mule deer and pronghorn antelope): 26,191 AUMs

In addition to forage allocation, all grazing allotments would be intensively managed. Intensive management is defined here as selecting or classifying grazing allotments for management under one of three levels as follows:

Level	Number of Allotments
1 (Maintain)	20-(Satisfactory Forage Condition)
2 (Improve)	81-(Unsatisfactory Forage Condition)
3 (Custodial)	210-(Small, Unconsolidated Allotments or Allotments Given Priority for Other Land Uses)

The 81 allotments that would be in management level 2 fall within the range priority use zones identified on the Renewable Resources Alternative Map. These allotments comprise approximately 195,946 acres (or 55 percent of the public land under permit) and have been targeted to receive priority for increased management to improve forage production and condition. Under this alternative, the overall effects of increased management would result in a long-term increase in forage production to a level of 55,404 AUMs and bring approximately 75 percent of the permitted public lands into satisfactory condition.

Needed range improvements identified for implementing this alternative include 20 spring developments, 50 stock ponds, 15 wells, 4 miles of ditch, 20 miles of pipeline, 70 miles of fence, and approximately 47,000 acres of land treatment (brush control and reseeding) at an estimated cost of $900,000. Additional costs of implementation would include approximately $150,000 for project reconstruction and $50,000 for use supervision and allotment monitoring. Total projected cost for the alternative would be $1,100,000 dispersed over a 10 year period.

Appendix 4 contains a listing of all proposed projects by allotment for this alternative.

Forest Products

Intensive forest management would be applied to economically accessible, productive commercial forest lands that were suitable for a variety of forest products on a sustained yield basis. Estimated forest acreage under intensive management would be 40,000 acres. The remaining forest lands would have limited management to maintain and protect the forest environment (60,000 acres). The annual allowable cut for the resource area would be about the same as the present 4 to 5 million board feet, but it could decrease slightly. The exact allowable cut would be determined in 1987, using the new timber production and operations inventories. All the intensively managed forested lands are shown as priority areas on the Renewable Resources Alternative Map.

Wildlife

Aquatic Wildlife

Streams with existing fisheries or fisheries potential that have a significant portion on public lands would be intensively managed to provide more opportunities for recreational fishing. Approximately 53 miles of stream habitat and 3 miles of riparian habitat would be affected. All other fisheries habitats would have limited management to protect or maintain their present condition.

Terrestrial Wildlife

Wildlife habitats would be managed for optimum wildlife levels as determined by the Colorado Division of Wildlife when conflicts with livestock did not exist. An estimated 10,528 mule deer, 3,224 elk, and 663 antelope would be supported by public lands. Emphasis would be placed on intensively managing critical and important wildlife habitats, with limited management on the remainder of the area. Management would occur on 326,000 acres of upland habitat and 3,000 acres of wetland habitat. Areas where wildlife have priority are shown on the alternative map.

Threatened and Endangered Species

All threatened and endangered (T&E) plant and animal habitats would be protected as required. Uses or activities that endanger them would be excluded. The protection areas identified on the Renewable Resources Alternative Map would include known T&E species habitats. Sites determined to be of significant value to programs such as the Colorado Natural Areas program would be considered for special area designation (e.g., Research Natural Area, ACEC, etc.).

Under this alternative, the registered *Phacelia formosula* site would be designated as an ACEC and managed for the primary purpose of scientific study and education because the land harbors an endangered species. Roughly 300 acres would be designated.

Visual Resources

Visual quality would be managed at the existing limited management level for sensitive Class II areas (those areas seen from major travel routes and adjacent to the intensively managed recreation areas).

Recreation

The existing SRMA on the Upper Colorado River (approximately 6,060 acres) and developed recreation sites (Pumphouse and Sunset fishing site) would continue to be intensively managed. The proposed Azure Project would be compatible with the objectives of this alternative, provided floatboating opportunities were maintained below the project area, including Little Gore Canyon.

Motorized recreational activities in the proposed North Sand Hills ACEC (roughly 1,400 acres) would be limited to locations and types of use that were compatible with the site's cultural and natural values. The existing withdrawal on the North Sand Hills would be retained. These areas are shown on the alternative map.

Wilderness

The Troublesome Wilderness Study Area (WSA) would be recommended as not suitable for wilderness designation. See discussion of suitability recommendation under Continuation of Present Management Alternative.

Cultural Resources

The usual practices of inventory and avoidance of identified archaeological or historic sites would be continued. The Windy Gap Site area (700

acres), shown as a priority area, would be intensively managed. The North Sand Hills (500 acres) would be designated as an ACEC to protect and maintain the existing cultural and natural values. The remaining existing cultural resource sites would be placed under limited management. Four other sites containing roughly 2,970 acres may be intensively managed. No new extensive inventory is anticipated, though the possibility of one new National Register site being added through regular inventory exists.

Lands and Realty

The lands and realty program would evaluate and process all use authorization applications, giving priority to those that enhanced or were consistent with the goals of this alternative. In order to provide better overall land management, a program of ownership consolidation would be supported. Criteria for locating major linear rights-of-way would be established.

Use Authorizations

Applications for use authorizations for small-scale, low impact actions would be processed and approved if:

1. Applications met the requirements under the law.
2. Placement on or use of public lands was the most suitable economically and environmentally.
3. Applications supported private or governmental needs on a local or regional basis.

Applications for use authorizations for major realty actions, such as dams, reservoirs, highways, transmission lines, etc., would be processed and approved if they met the three requirements for small-scale actions and did not adversely impact or conflict with existing uses or management of renewable resources.

Ownership Consolidation

The Bureau would process, initiate, and favor action for the consolidation of ownership where overall land management would be improved. This could include boundary adjustments between state and Federal agencies; blocking of land patterns, including private, state, public, and other Federal lands; and resolving split mineral estates. No acreage limitations would be placed on such actions.

Lands considered for acquisition would include:

1. Inholdings of private, state, or other Federal lands within large blocks of public lands
2. Land adjacent to intensively managed tracts of public land where overall program management would be enhanced, such as lands adjacent to special recreation management areas, intensively managed forest sites, grazing allotments, or important mineral areas
3. Lands of mineral importance where the Federal minerals are overlain by state or private surface ownerships

Public land considered suitable for disposal would include:

1. Inholdings within large blocks of state or other Federal lands
2. Public lands adjacent to large blocks of state or other Federal lands that would be best managed by that agency
3. Public lands overlying other mineral estates (state minerals, public surface)

Also considered for disposal would be isolated tracts that:

1. Have no important wildlife habitat values (winter range, nesting areas, mating areas, etc.)
2. Are not within a sensitive watershed or riparian area
3. Have only limited Bureau-initiated range management opportunities because of tract size, access difficulties, or adverse sites
4. Have no resource values of major significance
5. Potentially, 9,100 acres of public land would be suitable for disposal under this alternative. A map depicting disposal parcels is available for inspection in the Kremmling office.

Major Linear Rights-of-way

The placement of major linear rights-of-way, such as highways, pipelines, and transmission lines, would be dependent on meeting several location criteria. The Bureau would concentrate linear facilities within or contiguous to existing corridors where possible and avoid locations that would take intensive management forest land out of production. Also avoided would be locations that would cause harrassment to livestock or wildlife concentration areas and steep topography, poor soils, or other fragile areas, such as T&E habitats.

Cultural sites that are on or eligible for the National Register of Historic Places would be left undisturbed.

Community Expansion

Areas near or adjacent to the towns of Kremmling and Granby have been identified for community expansion. These lands would be available through sale, exchange, lease, grant, or patent to meet the development needs of these communities.

Support Needs

In order to achieve the management objectives stated in this alternative, numerous support actions would be needed. This support would come both from within and outside the Bureau.

Realty Actions

Existing withdrawals that no longer fulfilled the purpose for which they were intended would be revoked so lands could be opened to multiple use management.

Transportation and Access

The present transportation system is adequate to accomplish the management goals of this alternative, with the exception of those areas identified below which would require access in order to be intensively managed. Following the RMP, a transportation plan and map would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; off-road designation; and coordination with local, state, and Federal agencies' road programs.

In order to fulfill the management goals of this alternative, the following types of lands would require access:

Type of Public Land Needing Access	Approximate No. of Areas	Major Areas in this Type
1. Intensive management Forest Lands	15	Troublesome East and West, Canyon Creek, Drowsy Waters
2. Special recreation management areas (SRMAs)	0	
3. Large blocks of public lands with expressed public interest for access	2	McFarlane Reservoir, North Sand Hills

Resource Protection

Increased Bureau monitoring of uses and activities would be required. Cooperative agreements would be developed with local law enforcement agencies to provide needed patrols, surveillance, and law enforcement.

Cadastral

Surveys would be required in areas presently lacking adequate boundary surveys and controls of public lands. Priority would be given to those areas most likely to experience development, such as energy areas, forest management areas, areas scheduled for exchange, and areas of expanding human development (adjacent to towns or resorts).

Water Rights

The Bureau would file for water rights on those waters necessary to achieve the objective of this alternative, such as springs and well waters for livestock and wildlife.

Fire

Fire protection would be provided to most of the public lands in the resource area. Priority for initial attack would be those areas or resources of high value that may be damaged by or lost to fire, such as townsites, personal property, historic structures, forested areas, recreational sites, and critical habitats. Areas may be identified where fire would be allowed to burn to achieve management objectives. These areas would be identified site specifically in management prescriptions and would require fewer, if any, suppression efforts.

Fire Management

Fire may be used as a tool to achieve resource management objectives, such as vegetation manipulation, site preparation, and control of insects and disease. Specific treatment areas would be identified in subsequent activity plans. Controlled burning would comply with all air quality maintenance requirements.

Off-Road Vehicles (ORVs)

All public lands would be designated as open, limited, or closed to ORV use (as shown on the map for this alternative in the DEIS). Information and supervision would be provided in limited and closed areas.

Designations would be based on protecting resources on public lands (e.g., soil, watershed, vegetation, and wildlife) and minimizing conflicts among various uses of the public lands. Designations would be made in accordance with the criteria set forth in 43 CFR Part 8340. Under this alternative, 12 percent of the public lands in the resource area would be subject to limitations; the remaining 88 percent would remain open (i.e., not subject to restrictions). See the Renewable Resources alternative map in the draft RMP/EIS and Appendix 7 for a description of these designations.

Should the Kremmling Area Manager and Craig District Manager determine that ORVs were causing or would cause considerable adverse effects on other resources, they would use their authority under 43 CFR 8341.2 to immediately close or restrict ORV use in the affected area.

Outside Coordination Needs

BLM would coordinate timber harvesting and forest development projects with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, the U.S. Forest Service, and the state of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations and potential grazing management systems. with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, U.S. Forest Service, and State of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations.

The Bureau would coordinate all surface mining with the Colorado Mined Land Reclamation Board and surface coal mining with the U.S. Office of Surface Mining.

RECREATION ALTERNATIVE

The Recreation alternative would emphasize providing for and managing recreation opportunities on public lands to meet both existing levels of use and projected long-term demand. Areas with opportunities that are presently highly sought after, or with that potential, would be intensively managed or protected to maintain present recreation opportunities. The remainder of public lands would be managed to ensure their continuing availability for a variety of dispersed recreation activities in relatively unregulated settings.

A growing regional population with more free time and seeking recreation opportunities closer to home will increase the use pressure on the region's public land recreation base. The BLM administered public lands in the Kremmling Resource Area are the object of growing interest and demand as other public lands in the region become overcrowded. Although provision of recreation opportunities would be emphasized in certain areas, multiple-use, sustained yield objectives and all mandatory environmental protection requirements would be met.

Individual resources or resource programs would be managed or affected in the following ways.

Locatable Minerals

All Federal lands in the planning area would remain open to entry under provisions of the Mining Law of 1872, as amended, except those lands under protective withdrawal. Lands under protective withdrawal would be excluded from mineral entry. Development and certain types of exploration may have site-specific or temporary restrictions imposed in order to protect other important resource values.

Coal

Emphasis on leasing Federal coal would continue as needed to support existing operating mines. Approximately 13,000 acres would be made available for leasing. Site-specific restrictions would be imposed to protect the environment or other critical resource values. These restrictions would become part of the lease or approved mine plans. Preference Right Lease Application (PRLA) C-0125854 would be processed.

Those lands identified as unsuitable for surface mining after application of the unsuitability criteria and those lands identified as priority areas for wild-

life, livestock grazing, or oil and gas within the known recoverable coal resource area (KRCRA) would be excluded from future coal leasing consideration.

Oil and Gas

All Federal lands in the resource area would remain open to oil and gas leasing. Standard lease stipulations would continue to be used in the existing oil and gas fields.

Other public lands not in existing oil and gas fields would remain open to leasing but would be subject to additional stipulations. These would include no surface occupancy to protect recreation, wildlife, and scenic values, especially in special recreation management areas (SRMAs).

Mineral Materials

Federal lands would provide mineral materials to meet demands not filled by private enterprise and would provide free materials to local, state, and Federal agencies for road maintenance and construction. Existing or previously used sites would be favored. Sand and gravel disposal would be excluded from intensively managed forested areas, threatened and endangered plant and wildlife habitats, riparian or fisheries areas, sensitive watershed areas, water bird habitats, special recreation management areas, developed recreation sites, and visually sensitive Class II areas. Site-specific restrictions may be required to protect other resource values. They would be addressed prior to any mineral disposal.

Paleontological Resources

Fossils of scientific interest would be protected through limited management. Types of fossils and possible locations are identified in the Geology section of Chapter 2, Affected Environment. Sites containing fossils determined to be of significant public interest would be protected and managed for their scientific and interpretive values.

Water Resources

Surface Water

All streams on public lands in the resource area that met or exceeded state water quality standards (SWQS) and had acceptable channel stability would be maintained in their present condition. Streams not meeting state standards or having unstable channels that meet the criteria for intensive management would be improved to meet minimum standards or their channel stability improved to good. For streams that did not meet the SWQS or the criteria for intensive management, the Bureau would cooperate with other agencies or adjacent landowners to improve the water quality.

Groundwater

Groundwater would be protected to maintain its present good quality. This would be achieved by placing restrictions on activities that may penetrate into subterranean waters, such as oil and gas and mineral exploration and coal mining. Toxins and other impurities would not be allowed to flow or leach into groundwater aquifers; projects or actions would be designed to prevent this.

Livestock Grazing

Range forage would be allocated to exceed projected needs of optimum big game populations as determined by the Colorado Division of Wildlife, with the balance of available forage allocated for livestock. The initial forage allocations would be as follows:

Livestock: 31,305 AUMs.

Big game (Rocky Mountain elk, mule deer and pronghorn antelope): 34,368 AUMs.

In addition to forage allocation, all grazing allotments would be intensively managed. Intensive management is defined here as selecting or classifying grazing allotments for management under one of three levels. (Refer to the Management Categories section in this chapter for a complete description.) The number of allotments occurring within each level of management would be:

The 81 allotments that would be in Management Level 2 comprise approximately 195,946 acres (or 55 percent of the public land under permit) and have been targeted to receive priority for increased management to improve forage production and condition. Intensive range management practices

Level	Number of Allotments
1 (Maintain)	20-(Satisfactory Forage Condition)
2 (Improve)	81-(Unsatisfactory Forage Condition)
3 (Custodial)	210-(Small, Unconsolidated Allotments or Allotments Given Priority for Other Land Uses)

would be allowed in these as well as in all other grazing allotments, provided they were compatible with other favored resource programs, such as terrestrial and aquatic habitat management. Under this alternative, the overall effects of increased management would be a long-term increase in forage production to a level of 47,404 AUMs and approximately 75 percent of the permitted public lands being brought into satisfactory condition.

Needed range improvements identified for implementing this alternative include 20 spring developments, 50 stock ponds, 15 wells, 4 miles of ditch, 20 miles of pipeline, 70 miles of fence, and approximately 47,000 acres of land treatment (brush control and reseeding) at an estimated cost of $900,000. Additional costs of implementation would include approx. $150,000 for project reconstruction and $50,000 for use supervision and allotment monitoring. Total projected cost for the alternative would be $1,100,000 dispersed over a 10 year period.

Appendix 4 contains a listing of all proposed projects by allotment for this alternative.

Forest Products

Intensive forest management would be applied to most of the productive commercial forest lands (40,000 acres) to produce forest products on a sustained yield basis. The remaining forest lands would be placed under limited management to maintain and protect the forest environment (60,000 acres). The annual allowable cut for the resource area would be about the same as the present 4 to 5 million board feet. The exact allowable cut will be determined in 1987. The figure could be closer to the lower figure if productive woodlands were shelterwood cut (as opposed to being clearcut) to preserve visual areas.

Intensive forestry management would be subject to restrictions in SRMAs and sensitive Class II visual areas. Restrictions may include modifications in the design of a project to blend it in with the surrounding landscape and buffer zones around recreation use areas. Site-specific restrictions may be imposed on forest management practices in order to protect other resources. These would be addressed prior to the implementation of any forest management practices.

In order to maintain visual quality and protect the forested environment sought by the recreating public, uses or management practices that may take forest land out of production (in visual Class II areas or SRMAs) would have to be mitigated or restricted to ensure the return of the sites to the proper forest type.

Wildlife

Aquatic Wildlife

All streams with existing fisheries or fisheries potential on public lands would receive intensive management to protect and enhance their present condition. A total of 53 miles of stream habitat and 3 miles of riparian habitat would be intensively managed.

Terrestrial Wildlife

Wildlife habitat would be intensively managed to optimize wildlife populations. Forage would be allocated for big game levels above the long-term population objectives determined by the Colorado Division of Wildlife. Populations would include 14,900 mule deer, 3,720 elk, and 1,300 pronghorn. Approximately 326,800 acres of upland habitat and 3,000 acres of wetlands would be intensively managed. Emphasis would be placed on protecting and enhancing habitats for game species which provide recreation opportunities on public lands.

Threatened and Endangered Species

All threatened and endangered (T&E) plant and animal species habitats would be protected as required. Uses or activities that endanger them would be excluded. The protection areas identified on the Recreation Alternative Map include known T&E species habitats.

Visual Resources

Sensitive Class II areas would receive intensive management designed to protect and maintain existing visual character. Efforts would also be made through use of mitigating measures to maintain the visual character of the remaining public lands. However, emphasis would be given to meeting the needs of other resource uses and activities.

Recreation

The public lands would be managed to meet both existing levels of use and projected long-term demand. Areas with opportunities that are presently highly sought after, or with that potential, would be intensively managed or protected to maintain present recreation opportunities. The Upper Colorado River (roughly 6,060 acres) and North Sand Hills (about 1,400 acres) would continue to be managed as SRMAs. The Colorado River between Gore Canyon and State Bridge would be managed to provide and maintain floatboating opportunities and associated opportunities in a roaded natural setting.

The North Sand Hills would be managed to protect the cultural resources and the dune environment, while allowing ORV use and other recreation activities in a roaded natural setting. The existing mineral withdrawal on the North Sand Hills would be retained, but the Natural Area designation would be changed to SRMA.

In addition, five new SRMAs would be identified. These are Independence Mountain (18,620 acres) in North Park and Dice Hill (5,200 acres), Strawberry (6,020 acres), Troublesome (11,760 acres), and the Black Mountain-Drowsy Water complex (18,940 acres) in Middle Park (See Recreation Alternative Map). The management objective would be to protect and maintain the current types of recreation opportunities in these areas. Intensive management practices, including access acquisitions, would be implemented as use and resource conditions warranted. The reason these SRMAs have been identified is to recognize recreation as a principal management objective in response to projected increases in demand for specific types of recreation in the future. This would allow BLM to make major investments in both facilities and visitor assistance in these areas to deal with increases in demand.

The remaining public lands in the resource area would be managed for dispersed recreational uses, such as hunting, hiking, and sightseeing. These lands would be managed under the limited recreation management category.

Wilderness

Under this alternative, the Troublesome Wilderness Study Area (WSA) would be recommended as nonsuitable for wilderness designation. See discussion of suitability recommendation under Continuation of Present Management Alternative.

Cultural Resources

Management would emphasize the evaluation of all cultural resources for National Register potential and suitability for providing public information and education. Evaluation of sites in response to development or surface disturbing proposals would continue as required by law. Protection and mitigation would be required on significant sites, with protective measures emphasized on sites with scientific and/or interpretive values. The Windy Gap Site area (700 acres) north of Granby and the North Sand Hills area (500 acres) would be intensively managed. Four other sites containing roughly 290 acres may be intensively managed. An additional 2,000 acres may be inventoried, resulting in the possible addition of one new National Register site. Remaining sites would come under limited management.

Lands and Realty

The lands and realty program would evaluate and process all use authorization applications, giving priority to those that enhanced or were consistent with the goals of this alternative. In order to provide better overall land management, a program of ownership consolidation would be supported. Criteria for locating major linear rights-of-way would also be established.

Use Authorizations

Applications for use authorizations for small-scale, low impact actions would be processed and approved if:

1. Applications met the requirements under the law.
2. Placement on or use of public lands was the most suitable economically and environmentally.
3. Applications supported private or governmental needs on a local or regional basis.

Applications for use authorizations for major realty actions, such as dams, reservoirs, highways, transmission lines, etc., would be processed and approved if they met the three requirements for small-scale actions and did not adversely impact the environment or conflict with management objectives of SRMAs and sensitive Class II visual areas.

Ownership Consolidation

The Bureau would process, initiate, and favor action for the consolidation of ownership where overall land management would be improved. This could include boundary adjustments between state and Federal agencies and blocking of land patterns, including private, state, public, and other Federal lands. Land considered for acquisition would include:

1. Inholdings of private, state, or other Federal land within large blocks of public lands
2. Land adjacent to intensively managed tracts of public land where overall program management would be enhanced, such as lands adjacent to special recreation management areas, intensively managed forest sites, grazing allotments, or wildlife habitat

Public lands considered suitable for disposal would include isolated tracts that have:

1. No important wildlife habitat values
2. No opportunities for developed recreational sites
3. No potential for economical access
4. No opportunities for scientific study or interpretive values
5. No resource values of major significance
6. Potential to support recreation or tourism need in East Grand County through private or other agency development

Inholdings within large blocks of state or other Federal lands and public lands adjacent to large blocks of state or other Federal lands that would be best managed by that agency would also be considered for disposal.

Potentially, 13,800 acres of public lands would be suitable for disposal under this alternative. A map depicting the disposal parcels is available for inspection in the Kremmling office.

Major Linear Rights-of-Way

The placement of major linear rights-of-way, such as highways, pipelines, and transmission lines, would be dependent on meeting several location criteria. The Bureau would comply with contrast rating requirements in sensitive Class II visual areas and SRMAs. Developed sites would be avoided.

Linear facilities would be concentrated within or contiguous to existing corridors where possible and would be sited to avoid steep topography, poor soils, or other fragile areas, such as T&E habitats. Cultural sites that are on or eligible for the National Register of Historic Places would also be avoided.

Support Needs

In order to achieve the management objectives stated in this alternative, numerous support actions would be needed. This support would come both from within and outside the Bureau.

Realty Actions

Existing withdrawals that no longer fulfilled the purpose for which they were intended would be revoked so lands could be opened to multiple use management. The North Sand Hills withdrawal would be retained.

Access would be acquired to intensive management areas that presently lack suitable access, such as intensively managed forested areas and SRMAs.

Transportation and Access

The present transportation system is adequate to accomplish the management goals of this alternative, with the exception of those areas identified below which would require access in order to be intensively managed. Following the RMP, a transportation plan and map would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; off-road designation; and coordination with local, state, and Federal agencies' road programs.

In order to fulfill the management goals of this alternative, the following types of lands would require access:

Type of Public Land Needing Access	Approximate No. of Areas	Major Areas in this Type
1. Intensive management Forest Lands	15	Canyon Creek, South Bull Mountain, Troublesome - East
2. Special recreation management areas (SRMAs)	3	Troublesome - West, Drowsy Water, North Sand Hills
3. Large blocks of public lands with expressed public interest for access	1	McFarlane Reservoir

Resource Protection

Increased Bureau monitoring of uses and activities would be required. Cooperative agreements would be developed with local law enforcement agencies to provide needed patrols, surveillance, and law enforcement, especially in high use recreation areas.

Cadastral

Surveys would be required in areas presently lacking adequate boundary surveys and controls of public lands. Priority would be given to intensive forest management areas, areas of expanding human development (adjacent to towns or resorts), and areas where the land status was uncertain, resulting in frequent trespass by recreationists.

Water Rights

The Bureau would file for water rights on those waters necessary to achieve the objective of this alternative, such as springs and well waters for wildlife.

Fire

Fire protection would be provided to most of the public lands in the resource area. Priority for initial attack would be those areas or resources of high value that may be damaged by or lost to fire, such as townsites, personal property, historic structures, forested areas, recreational sites, and critical habitats. Areas may be identified where fire would be allowed to burn to achieve management objectives. These areas would be identified site specifically in management prescriptions and would require fewer, if any, suppression efforts.

Fire Management

Fire may be used as a tool to achieve resource management objectives, such as vegetation manipulation, site preparation, and control of insects and disease. Specific treatment areas would be identified in subsequent activity plans. Controlled burning would comply with all air quality maintenance requirements.

Off-Road Vehicles (ORVs)

All public lands would be designated as open, limited, or closed to ORV use (as shown on the map for this alternative in the DEIS), with information and supervision being provided in limited and closed areas. Designations would be based on protecting the resources on public lands (e.g., soil, watershed, vegetation, and wildlife), promoting the safety of all users of the public lands, and minimizing conflicts among various uses. Designations would be made in accordance with the criteria set forth in 43 CFR 8340. Under this alternative, 12 percent of the public lands in the resource area would be subject to limitations; the remaining 88 percent would remain open (i.e., not subject to restrictions). See the Recreation alternative map in the draft RMP/EIS and Appendix 7 for a description of these designations.

Should the Kremmling Area Manager and Craig District Manager determine that ORVs were causing or would cause considerable adverse effects upon other resources, they would use their authority under 43 CFR 8341.2 to immediately close or restrict ORV use in the affected area.

Outside Coordination Needs

BLM would coordinate timber harvesting and forest development projects with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, the U.S. Forest Service, and the State of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations and potential grazing management systems.

NATURAL ENVIRONMENT ALTERNATIVE

The Natural Environment Alternative emphasizes the protection, maintenance, and enhancement of the current natural environment within the Kremmling Resource Area. Management practices, uses, and resources that maintain and reinforce this natural environment would be emphasized. The enjoyment and use of the natural environment for present and future generations, both locally and nationally, would be a high priority. Existing multiple use/sustained yield activities, as well as nonrenewable resource uses, would continue at sufficient levels to maintain existing industries.

Individual resources or resource programs would be managed or affected in the following ways.

Locatable Minerals

All Federal lands in the planning area would continue to remain open to entry under provisions of the Mining Law of 1872, as amended, except those lands under protective withdrawal. Lands under protective withdrawal would be excluded from mineral entry. Development and certain types of exploration would have site-specific or temporary restrictions imposed to protect other important resource values.

Coal

Emphasis on leasing Federal coal would continue as needed to support existing operating mines, with approximately 13,000 acres being made available for leasing. Site-specific restrictions would be imposed to protect the environment or other critical resource values. These restrictions would become part of the lease or approved mine plan. Preference Right Lease Application (PRLA) C-0125854 would be processed.

Those lands identified as unsuitable for surface mining after application of the unsuitability criteria and those lands identified as priority areas for wildlife, livestock grazing, or cultural resources within the known recoverable coal resource area (KRCRA) would be excluded from future coal leasing consideration.

Oil and Gas

All Federal lands in the resource area would continue to remain open to oil and gas leasing. The existing areas with greatest potential for development (see Natural Environment Alternative Map) would be committed to the exploration and development of oil and gas resources. The standard lease stipulations would be applied to these areas, along with site-specific or temporary restrictions imposed to protect other important resource values.

Mineral Materials

Federal lands would continue to provide mineral materials to meet demands not filled by private enterprise and would provide free materials to local, state, and Federal agencies for road maintenance and construction. Existing or previously used sites would be favored. Sand and gravel disposal would be excluded from intensively managed forested areas, threatened and endangered plant and wildlife habitats, riparian or fisheries areas, sensitive watershed areas, water bird habitats, cultural sites, and special recreation management areas (SRMAs). Site-specific restrictions would be required to protect other resource values. They would be addressed prior to any mineral disposal.

Paleontological Resources

Fossils of scientific interest would be protected through salvage, identification, and research. Significant fossils may be developed through public education and information. Types of fossils and formation locations are identified in the Geology section of Chapter 2. Sites determined to be of significant value to Bureau programs or programs such as the Colorado Natural Areas program would be considered for special area designation (e.g., research natural area, ACEC, etc.). The Kremmling Cretaceous Ammonite site would be designated as a Research Natural Area and managed for research and resource protection. Roughly 200 acres would be designated.

Water Resources

Intensive management of water resources to maintain public waters at or above state water quality standards would occur. Input to other land use plans and active protection of sensitive watersheds through watershed management plans, using certain forms of mechanical stabilization and vegetation treatments, would also be undertaken. Stream channels and riparian zones would be improved as needed.

Livestock Grazing

Range forage would be allocated to exceed projected needs of optimum big game populations as determined by the Colorado Division of Wildlife, with the balance of available forage allocated for livestock. The initial forage allocations would be as follows:

Livestock: 31,305 AUMs

Big game (Rocky Mountain elk, mule deer and pronghorn antelope): 34,368 AUMs

In addition to forage allocation, all grazing allotments would be intensively managed. Intensive management is defined here as selecting or classifying grazing allotments for management under one

of three levels (refer to the Management Categories section of this chapter for a complete description). The number of allotments occurring within each level of management would be:

Level	Number of Allotments
1 (Maintain)	20-(Satisfactory Forage Condition)
2 (Improve)	81-(Unsatisfactory Forage Condition)
3 (Custodial)	210-(Small, Unconsolidated Allotments or Allotments Given Priority for Other Land Uses)

The 81 allotments that would be in management level 2 comprise approximately 195,946 acres (or 55 percent of the public land under permit) and have been targeted to receive priority for increased management to improve forage production and condition. Most intensive range management practices would be allowed in these, as well as all other, grazing allotments, provided they were compatible with other favored resource programs, such as terrestrial and aquatic habitat management. However, prescribed burning would be the only type of vegetation manipulation permitted since it would be most compatible with the natural setting. Under this alternative, the overall effects of increased management would be a long-term increase in forage production to a level of 47,404 AUMs and approximately 75 percent of the permitted public lands being brought into satisfactory condition.

Needed range improvements identified for implementing this alternative include 20 spring developments, 50 stock ponds, 15 wells, 4 miles of ditch, 20 miles of pipeline, 70 miles of fence, and approximately 10,000 acres of prescribed burning at an estimated cost of $489,000. Additional costs of implementation would include approximately $150,000 for project reconstruction and $50,000 for use supervision and allotment monitoring. Total projected cost for the alternative would be $689,000 dispersed over a 10 year period.

Appendix 4 contains a listing of all proposed projects by allotment for this alternative.

Forest Products

Intensive forest management would continue on all productive commercial forest lands (40,000 acres) to produce forest products on a sustained yield basis. The remaining forested lands would be placed under limited management to maintain and protect the forest environment (60,000 acres). The annual allowable cut for the resource area would remain at 4 to 5 million board feet. The new allowable cut will be determined in 1987, using the new inventory information. The cut will probably be closer to 4 million board feet to allow for protection of visual and other natural environmental values.

All forested land receiving intensive management is shown as a priority on the Natural Environment Alternative Map.

Wildlife

Aquatic Wildlife

All streams with existing fisheries or fisheries potential on public lands would be managed to protect, maintain, or improve their present condition.

Terrestrial Wildlife

Wildlife habitats would be intensively managed to maintain or increase wildlife populations. Forage would be allocated for big game levels above the long-term population objectives determined by the Colorado Division of Wildlife. These populations would include 14,900 deer, 3,720 elk and 1,300 antelope. Priority would be placed on protecting all critical wildlife habitats (identified on inventory information available at the Kremmling Resource Area Office). Habitats would be improved by natural methods (prescribed burning) rather than by mechanical means.

Threatened and Endangered Species

All threatened and endangered (T&E) plant and animal habitats would be protected as required. Uses or activities that endanger them would be excluded. The protection areas identified on the Natural Environment Alternative Map include the known T&E habitats. Sites determined to be of significant value to programs such as the Colorado Natural Areas program would be considered for special area designation (research natural area, ACEC, etc.).

Under this alternative, the registered *Phacelia formosula* site would be designated as a Research Natural Area (RNA) in order to provide for scientific study, research, and education because the land (approximately 300 acres) harbors an endangered species. Studies would be conducted to determine the plant's response to (1) grazing and trampling from livestock and wildlife, (2) environmental changes from year to year, and (3) erosion. Moni-

toring would occur on the site. Population dynamics would be researched.

Visual Resources

The visual quality of all Class II visual management areas would be maintained and protected.

Recreation

The upper Colorado River (approximately 6,060 acres) would continue to be managed as a special recreation management area (SRMA). The upper Colorado River between Gore Canyon and State Bridge would be managed to provide and maintain floatboating opportunities and associated activities in a roaded natural setting. The proposed Azure Project would not be compatible with the objectives of this alternative because of its effect on the natural environment and existing recreation opportunities.

The North Sand Hills would be managed as an outstanding natural area (1,400 acres) and the minerals withdrawal retained, instead of being managed as an SRMA, to protect and enhance natural geological and cultural values. ORV use would be inconsistent with this goal and would be prohibited.

Remaining lands would receive limited management for dispersed types of recreation. Significant cultural resources sites would be researched and interpreted for public information and education.

Wilderness

The Troublesome Wilderness Study Area (WSA) would be recommended as suitable for wilderness designation. As documented in the BLM Intensive Wilderness Inventory, the area has the mandatory wilderness characteristics of size, naturalness, and outstanding opportunities for both solitude and primitive and unconfined recreation. There are no identified special features (i.e., ecological, geological, or other features of scientific, educational, scenic, or historical value). The area would provide opportunities for solitude or primitive recreation within a day's driving time (i.e., 5 hours) of the Denver metropolitan area. Public access would have to be acquired to the area for these opportunities to be realized.

The area could be reasonably managed to preserve its wilderness character. No pre-FLPMA oil and gas leases or other uses, such as mining claims, which would degrade the wilderness character are known to exist. The private inholding, while impeding movement to a certain degree, is managed by its present owners essentially as a primitive retreat; however, this management is subject to change. Because of its location in a narrow stream valley in the southern part of the area, activities that take place on the inholding do not impair the area's overall wilderness characteristics. The access road to this inholding forms the boundary of the area.

No specific off-site impacts have been identified which would degrade the wilderness values of the area. The nonwilderness management of the adjoining national forest lands, while not currently conflicting with wilderness management, is subject to change. In addition, no significant energy and mineral values have been identified which would outweigh the wilderness values.

If Congress adopted the view presented in this alternative and the Troublesome WSA received wilderness designation, the area would be managed according to the Bureau's Wilderness Management Policy (September 1981).

Cultural Resources

Cultural resources would be managed at their optimum level, with protection, inventory, maintenance, enhancement, public information/education, interpretation, and research all taking place. Significant sites would be evaluated under the National Register of Historic Places (NRHP) criteria, with eligible sites being managed through a cultural resources management plan. Priority areas and areas having high potential would be inventoried. The presence of significant cultural resources would become a limiting factor for authorizations.

The Windy Gap Site area (700 acres) north of Granby and the North Sand Hills area (500 acres) are the only currently identified priority areas for intensive management. Six other important NRHP sites containing 3,310 acres would be intensively managed. Remaining sites would be placed under limited management. A total of 12,000 acres may be inventoried, resulting in the possibility of three new sites being added to the National Register.

Lands and Realty

The protection, maintenance, and enhancement of the existing natural environment would be emphasized. The lands and realty program would con-

tinue to evaluate and process all use authorization applications. In order to provide better overall land management, a program of ownership consolidation would be supported. Criteria for locating major linear rights-of-way would be established.

Use Authorizations

Applications for use authorizations for small-scale, low impact actions would be processed and approved if:

1. Applications met the requirements under the law.
2. Placement on or use of public lands was the most environmentally suitable.
3. Applications supported private or governmental needs on a local or regional basis.

Applications for use authorizations for major realty actions, such as dams, reservoirs, highways, transmission lines, etc., would be processed and approved if they met the three requirements for small-scale actions, and did not adversely impact the environment or conflict with natural environment values of the area and region, including SRMAs, Natural Areas, special T&E areas, significant cultural resource sites, and Class II visual areas.

Ownership Consolidation

The Bureau would process, initiate, and favor action for the consolidation of ownership where overall land management would be improved. This could include boundary adjustments between state and Federal agencies; blocking of land patterns, including private, state, public, and other Federal lands; and resolving split mineral estates. No acreage limitations would be placed on such actions.

Lands considered for acquisition would include:

1. Inholdings of private, state, or other Federal land within large blocks of public lands
2. Land adjacent to intensively managed tracts of public land where overall program management would be enhanced, such as lands adjacent to special recreation management areas, intensively managed forest sites, or grazing allotments
3. Lands of mineral importance where the Federal minerals are overlain by state or private surface ownerships

Public lands considered suitable for disposal would include isolated tracts that have:

1. No scenic values
2. No open space values
3. No important wildlife habitat values
3. No natural, cultural, or historic values
5. No resource values of major significance

In addition, public lands adjacent to large blocks of state or other Federal lands that would be best managed by that agency would also be considered for disposal.

Only 525 acres of public lands would be considered suitable for disposal under this alternative. A map depicting the disposal parcels is available for inspection in the Kremmling office.

Major Linear Rights-of-way

The placement of major linear rights-of-way, such as highways, pipelines, and transmission lines, would be dependent on meeting several location criteria. The Bureau would encourage locations of linear facilities that would result in minimal environmental impacts and concentrate linear facilities within or contiguous to existing corridors, where possible. Steep topography, skyline effect, poor soils, and other fragile areas, such as T&E habitats, cultural resource sites, Class II visual areas, riparian areas, community areas, SRMAs, natural areas, and intensive resource management areas, would be avoided.

Community Expansion

Areas near or adjacent to the towns of Kremmling and Granby have been identified for community expansion. These lands would be available through sale, exchange, lease, grant, or patent to meet the development needs of these communities.

Support Needs

In order to achieve the management objectives stated in this alternative, numerous support actions would be needed. This support would come both from within and outside the Bureau.

Realty Actions

Existing withdrawals that no longer fulfilled the purpose for which they were intended would be revoked so lands could be opened to multiple use management.

Access would be acquired to intensive management areas that presently lack suitable access,

such as intensively managed forested areas and SRMAs.

Transportation and Access

The present transportation system is adequate to accomplish the management goals of this alternative, with the exception of those areas identified below which would require access in order to be intensively managed. Following the RMP, a transportation plan and map would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; off-road designation; and coordination with local, state, and Federal agencies' road programs.

In order to fulfill the management goals of this alternative, the following types of lands would require access:

Type of Public Land Needing Access	Approximate No. of Areas	Major Areas in this Type
1. Intensive management forest lands	15	Canyon Creek, South Bull Mountain, Drowsy Water
2. Special recreation management areas (SRMAs)	0	
3. Large blocks of public lands with expressed public interest for access	3	Troublesome, North Sand Hills, McFarlane Reservoir

Resource Protection

Increased Bureau monitoring of uses and activities would be required. Cooperative agreements would be developed with local law enforcement agencies to provide needed patrols, surveillance, and law enforcement.

Water Rights

The Bureau would file for water rights on those waters necessary to achieve the objective of this alternative, such as springs and well waters for livestock and wildlife.

Fire

Fire protection would be provided to most of the public lands in the resource area. Priority for initial attack would be those areas or resources of high value that may be damaged by or lost to fire, such as townsites, personal property, historic structures, forested areas, recreational sites, and critical habitats. Areas may be identified where fire would be allowed to burn to achieve management objectives. These areas would be identified site specifically in management prescriptions and would require fewer, if any, suppression efforts.

Fire Management

Fire may be used as a tool to achieve resource management objectives, such as vegetation manipulation, site preparation, and control of insects and disease. Specific treatment areas would be identified in subsequent activity plans. Controlled burning would comply with all air quality maintenance requirements.

Off-Road Vehicles (ORVs)

All public lands would be designated as open, limited, or closed to ORV use (as shown on the map for this alternative). Information and supervision would be provided in limited and closed areas.

Designations would be based on protecting public lands resources (e.g., soil, watershed, vegetation, and wildlife) and minimizing conflicts among various public land users. Designations would be made in accordance with the criteria set forth in 43 CFR 8340. The North Sand Hills Outstanding Natural Area and Troublesome Wilderness Area (if designated by Congress) would be closed to ORVs. Under this alternative, 2 percent of the public lands would be closed to ORVs, 12 percent would be subject to limitations, and 86 percent would remain open (i.e., not subject to restrictions). See the Natural Environment alternative map in the draft RMP/EIS and Appendix 7 for a description of these designations.

Should the Kremmling Area Manager and Craig District Manager determine that ORVs were causing or would cause considerable adverse effects on other resources, they would use their authority under 43 CFR 8341.2 to immediately close or restrict ORV use in the affected area.

Outside Coordination Needs

The Bureau would coordinate timber harvesting and forest development projects with the U.S. Forest Service, Colorado State Forest Service, and adjacent private landowners for possible timing of joint sales or projects. Transportation plans would be coordinated with the county, the U.S. Forest

Service, and the State of Colorado. BLM would also consult and coordinate with each livestock permittee regarding forage allocations and potential grazing management systems.

Coordination with other Federal agencies, as well as local and regional agencies, and county and state governments on authorizations and land use plans affecting either party would occur.

IMPLEMENTATION AND MONITORING

A record of decision will be issued following publication of this final environmental impact statement (FEIS). Printed with the record of decision will be the final RMP. The final RMP will contain the decision on all the land use recommendations proposed in this FEIS. It will also contain implementation criteria and a monitoring plan.

The implementation criteria will guide the order in which projects are implemented. These criteria will be tied to the budget process and will be accomplished first, second, and so on.

The monitoring plan will outline monitoring programs for evaluating the effectiveness of plan proposals such as forage allocations and water quality improvements. Monitoring will determine whether assumptions were correctly applied and impacts correctly predicted. Monitoring will also help to establish long-term use and resource condition trends for the resource area and will provide valuable information for future planning.

The District Manager will evaluate the plan at least every 5 years, applying the monitoring criteria to determine if there is a need to revise the plan.

The plan or portions of the plan will be revised to incorporate new data, changes in policy, or changes in other circumstances that are sufficient to warrant revision.

The record of decision will be the approval authority for implementing the land use allocations, broad production goals, and other actions contained in the final RMP. However, activity plans and environmental assessments will be required prior to conducting specific actions such as timber harvesting. For example, forest management plans will show specific project locations; describe and analyze the impacts of specific actions associated with development, operation, and rehabilitation of the project; and compare project costs with project benefits.

COMPARISON OF ALTERNATIVES

The resource components of each alternative are compared in summary form in Table 3-28. The table compares the alternatives by units of output, management emphasis, forage or land allocation, costs, impacts, and other significant factors.

The purpose of this section is to focus the reader's attention on the major difference between the alternatives, thus providing a clearer basis for comparison and, ultimately, for the rationale behind choosing a favored alternative.

TABLE 3-28 -- COMPARISON OF ALTERNATIVES

RESOURCE	Continuation of Present Management	Proposed Plan	Energy-Mineral	Economic Benefit	Renewable Resources	Recreation	Natural Environment
LOCATABLE MINERALS							
Surface use restrictions on exploration and development.	Developed on case-by-case basis when exploration or development plans submitted.	Moderate. Surface restrictions necessary to protect significant renewable resource values and environmentally sensitive areas.	Low. Surface restrictions to protect environmentally sensitive areas.	Moderate. Surface restrictions necessary to protect significant renewable resource values and environmentally sensitive areas.	Moderate. Surface restrictions necessary to protect significant renewable resource values and environmentally sensitive areas.	High. Surface restriction necessary to protect significant renewable and scenic resources values plus the environmentally sensitive areas.	Very High. Restrictions necessary to protect renewable resources, scenic and wilderness values plus environmentally sensitive areas.
COAL							
Emphasis on land availability for coal mining and/or future leasing.	Least. Existing leases and tracts identified in 1977 MFP. Limited opportunities for expansion.	Moderate. Existing leases and sufficient acreage to allow for continuation and expansion of coal industry.	High. Existing leases and acreage to allow for continuation and expansion of coal industry.	Highest. Existing leases and all suitable coal land are available for coninuation and expansion of coal industry.	Low. Existing leases and sufficient acreage to allow for continuation of existing operations.	Low. Existing leases and sufficient acreage to allow for continuation of existing operations.	Low. Existing leases and sufficient acreage to allow for continuation of existing operations.
a. Approximate no. of acres available	6,000	45,000	60,000	107,000	13,000	13,000	13,000

TABLE 3-28 -- COMPARISON OF ALTERNATIVES—Continued

RESOURCE	Continuation of Present Management	Proposed Plan	Energy-Mineral	Economic Benefit	Renewable Resources	Recreation	Natural Environment
OIL AND GAS							
Surface use restrictions on exploration and development.	Moderate. Restrictions identified in Umbrella Environmental Analysis.	Moderate. Restrictions similar to those in Umbrella EAs. No leasing for T&E plant or ACEC.	Low. Minimal surface restriction beyond standard lease stips. Management emphasis for oil and gas development is high.	Moderate. Restrictions similar to those in Umbrella EAs.	Moderate. Restrictions similar to those in Umbrella EAs. No leasing in ACECs (T&E plant site and N. Sand Hills).	High. Additional restrictions to protect recreation and scenic resource values.	Very High. Additional restictions to protect scenic and natural areas. No leasing in Troublesome Wilderness Area.
LIVESTOCK GRAZING							
Initial Forage Allocation Based on Range Condition Inventory (AUMs)	45,648 AUMs	Reduce from 45,648 AUMs authorized to 39,726 AUMs.	Increase from 45,648 AUMs authorized to 52,652 AUMs.	Increase from 45,648 AUMs authorized to 52,652 AUMs.	Reduce from 45,648 AUMs authorized to 39,726 AUMs.	Reduce from 45,648 AUMs authorized to 31,305 AUMs.	Reduce from 45,648 AUMs authorized to 31,305 AUMs.
Expected Long-Term Forage Allocation							
a. No. of AUMs	40,817	54,296	48,754	65,531	56,050	47,404	47,404
b. Percentage of range land in satisfactory condition	20%	70%	20%	65%	75%	75%	75%
Allotment Mangement Plans (AMPs)							
a. No. of AMPs*	4	76	F4	63	81	81	81
b. No. of acres under AMPs	14,120	180,585	14,120	160,038	195,946	195,946	195,946
c. Percentage of R.A. grazing lands under AMPs	4%	51%	4%	45%	55%	55%	55%
d. Average No. AMP/yr prepared (new)	0	8	0	6	8	8	8
Range Improvement Projects							
a. No.-Type-Cost per 10 yr. schedule	Reconstruction of existing projects -- $150,000	Reconstruction - $150,000; 20 Springs-devel. - $30,000; 46 stockponds - $92,000; 14 wells - $70,000; 4 miles ditch - $6,000; 18 miles pipeline - $21,600; 66 miles fence - $211,200; 2,900 acres brushbeat - $72,500; 21,000 acres sprayed - $252,000; 9,600 acres burn - $28,800; 11,700 acres reseed - $70,200.	Reconstruction of existing projects - $150,000.	Reconstruction - $150,000; 17 springs-develop. - $25,500; 38 stockponds - $76,000; 12 wells - $60,000; 4 miles ditch - $6,000; 15 miles pipeline - $18,000; 52 miles fence - $166,400; 2,500 acres brushbeat - $62,500; 16,000 acres sprayed - $192,000; 7,700 acres burn - $23,100; 9,000 acres reseed - $54,000.	Reconstruction - $150,000; 20 springs-develop. - $30,000; 50 stockponds - $100,000; 15 wells - $75,000; 4 miles ditch - $6,000; 20 miles pipeline - $24,000; 70 miles fence - $224,000; 3,000 acres brushbeat - $75,000; 22,000 acres sprayed - $264,000; 10,000 acres burn - $30,000; 12,000 acres reseed - $72,000.	Reconstruction - $150,000; 20 springs-devel. - $30,000; 50 stockponds - $100,000; 15 wells - $75,000; 4 miles ditch - $6,000; 20 miles pipeline - $24,000; 70 miles fence - $224,000; 3,000 acres brushbeat - $75,000; 22,000 acres sprayed - $264,000; 10,000 acres burn - $30,000; 12,000 acres reseed - $72,000.	Reconstruction - $150,000; 20 springs-devel. - $30,000; 50 stockponds - $100,000; 15 wells - $75,000; 4 miles ditch - $6,000; 20 miles pipeline - $24,000; 70 miles fence - $224,000; 10,000 acres burn - $30,000.
Range Management Implementation Costs ($)							
Reconstruction	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
New Projects	--	854,300	--	683,500	900,000	900,000	489,000
Use Supervision**	--	24,000	--	20,000	25,000	25,000	25,000
Monitoring***	--	24,000	--	20,000	25,000	25,000	25,000
Total	$150,000	$1,052,300	$150,000	$873,500	$1,100,000	$1,100,000	$689,000
FOREST PRODUCTS							
Annual Allowable Harvest (million bd. feet) ***	5+	4.5	5+	5+	4.5	4.3	4.0
Management Intensity							
a. Intensive (acres)	50,000	40,000	50,000	50,000	40,000	40,000	40,000
b. Limited (acres)	50,000	60,000	50,000	50,000	60,000	60,000	60,000

TABLE 3-28 -- COMPARISON OF ALTERNATIVES—Continued

RESOURCE	Continuation of Present Management	Proposed Plan	Energy-Mineral	Economic Benefit	Renewable Resources	Recreation	Natural Environment
WILDLIFE							
Initial Forage Allocation (AUMs) Public Lands Inventory	21,949	26,191	13,150	13,150	26,191	34,368	34,368
Habitat Managed to Support****							
No. Deer	6,982 (26%)	10,528 (39%)	6,982 (26%)	6,982 (26%)	10,528 (39%)	14,164 (53%)	14,164 (53%)
No. Elk	3,175 (37%)	3,224 (37%)	3,175 (37%)	3,175 (37%)	3,224 (37%)	3,159 (37%)	3,159 (37%)
No. Antelope	663 (88%)	663 (88%)	663 (88%)	663 (88%)	663 (88%)	663 (88%)	663 (88%)
Miles stream habitat improvement (Estimated costs - $1,000/mile)	8	53	8	8	53	53	53
Miles riparian habitat improvement (Estimated costs - $3,000/mile)	3	3	3	3	3	3	3
Acres of upland habitat maintained or improved	326,800	326,800	225,000	225,000	326,800	326,800	326,800
Acres of water fowl/shorebird habitat maintained or improved	1,000	3,000	1,000	1,000	3,000	3,000	2,000
VISUAL							
Degree of potential change in overall character	Minor	Negligible	Minor	Minor	Negligible	Negligible	Negligible
WILDERNESS							
Troublesome WSA Recommendation	Not suitable for wilderness.	Not suitable for wilderness.	Not suitable for wilderness.	Not suitable for wilderness.	Not suitable for wilderness.	Not suitable for wilderness.	Suitable for wilderness.
RECREATION							
Special Management Areas							
1. Designated SRMAs (acres)	1 (6,060)	2 (7,460)	3 (13,460)	2 (7,460)	1 (6,060)	7 (71,840)	1 (6,060)
2. Potential SRMAs (acres)*****	0	0	0	4 (36,160)	0	0	0
3. ACEC (acres)	0	0	0	0	3 (1,900)	0	0
4. Natural Area (acres)	1 (1,400)	2 (500)	0	0	0	0	3 (1,900)
ORV							
Degree of restrictions (% of public land in resource area)	Small sites; mainly N. Sand Hills 1% limited 99% open	12% limited 88% open	7% limited 93% open	11% limited 89% open	12% limited 88% open	12% limited 88% open	N. Sand Hills and Troublesome WSA closed 2% closed 12% limited 86% open
CULTURAL RESOURCES							
Intensive Management							
a. No. of sites	2	3	6	7	6	6	8
b. Acres	710	790	1,730	2,050	4,110	1,490	4,510
c. No. ACEC and Name	0	0	0	0	1 No. Sand Hill	0	0
Inventory							
a. No. of acres	0	8,000	4,000	6,000	0	2,000	12,000
b. Potential No. of new NRHP sites	0	6	3	4	2	1	3
LANDS AND REALTY							
Major linear rights-of-way							
a. Location Emphasis	None. On a case-by-case basis.	Somewhat restrictive. Avoidance of areas to protect significant renewable resource values and environmentally sensitive areas.	Least restrictive. Avoidance of only environmentally sensitive areas.	Least restrictive. Avoidance of only environmentally sensitive areas.	Somewhat restrictive. Avoidance of areas to protect significant renewable resource values and environmentally sensitive areas.	Most restrictive. Avoidance of areas to protect significant recreational, scenic and natural values as well as environmentally sensitive areas.	Most restrictive. Avoidance of areas to protect significant recreational, scenic and natural values as well as environmentally sensitive areas.

TABLE 3-28 -- COMPARISON OF ALTERNATIVES—Continued

RESOURCE	Continuation of Present Management	Proposed Plan	Energy-Mineral	Economic Benefit	Renewable Resources	Recreation	Natural Environment
Land disposal potential number of acres available for disposal	None designated. Handled on a case-by-case basis.	18,700	12,000	16,7000	9,100	13,800	525
ACCESS							
Estimated number of areas needing access	46	29	47	48	17	19	18

* Number of AMPs shown under each alternative is for Level 2 allotments only; these will have first priority for AMP development. However, AMPs for Level 1 and 3 allotments will also be developed where needed to achieve specific objectives.
** Costs for use supervision and monitoring are in addition to present costs, not total cost.
*** Annual cut remains at 4 to 5 mmbf until recalculation in 1987. Numbers shown are estimates for years after 1987.
**** Numbers in parentheses indicate percent of Colorado Division of Wildlife's long-term population obbjectives (for animals supported by public lands).
***** Includes developed sites outside SRMAs managed by BLM or under cooperative agreement.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the cumulative environmental impacts of the alternatives presented in Chapter 3. Because the alternatives are based on management emphases for the Kremmling Resource Area and do not propose site- specific projects, impacts are assessed in a general manner.

The chapter is arranged by environmental element (e.g., air quality, soils, vegetation, etc.). Environmental consequences are discussed by alternative under each element in comparative form. This is done to emphasize the differences between the alternatives. The alternatives are analyzed in the same order they are presented in Chapter 3.

The objective of this approach is to make it easier to form a clear basis for choosing among the alternatives for both the decisionmaker and the public.

AIR QUALITY

Continuation of Present Management Alternative

The impact of management activities on the air quality of the area is expected to be insignificant. This is due to the low number of proposed surface disturbing activities and the fact that use would be short-term and dispersed over a large area.

Vegetation removal and soil exposure caused by mineral exploration, forestry, grazing, ORV use, fire, and other surface disturbing activities would contribute to the amount of total suspended particulates (TSP) in the air. The quantity of TSP created would depend upon the type and amount of disturbance, soil type, moisture conditions of the soil, and local wind conditions. The TSP duration would depend on the type and extent of activity and the time required to revegetate the site. The effect of TSP would be localized to areas near the disturbance and would be affected by the wind speed and direction. Wind is the only form of transport for TSP, with large particles settling out closer to the disturbance and finer particles further away.

Major actions that contribute to present TSP and emission levels include coal mining, mineral development, construction activities, and vehicle use.

Range management activities in this alternative would not significantly impact air quality.

Proposed Plan, Renewable Resources, and Natural Environment Alternatives

There is not expected to be any significant change from the Continuation of Present Management Alternative under any of these alternatives. There is a potential for a slight decrease under the Natural Environment Alternative due to the decrease in construction activities.

Range management activities would not significantly impact air quality under these alternatives.

Energy and Minerals and Economic Benefit Alternatives

The impacts described in the Continuation of Present Management Alternative would occur at a potentially higher level in these two alternatives due to the projected increase in level of activity. The impact on air quality is expected to be minimal in both alternatives, due to mitigating measures to be implemented to meet Office of Surface Mining (OSM) requirements and Federal, state and local air quality standards.

Range management activities would not significantly impact air quality under either alternative.

Recreation Alternative

The impacts of this alternative should be similar to the Continuation of Present Management Alternative. The differences should be insignificant, with one minor exception. The amount of road construction, maintenance, and use would be slightly higher, resulting in an increase in TSP. The amount of this increase is expected to be neither significant nor measurable.

Range management activities would not significantly impact air quality under this alternative.

Unavoidable Adverse Effects

All Alternatives

Increases in TSP and exhaust emissions are expected to be of short duration and low quantity and

to be dispersed over large areas. Due to these factors and mitigation, these unavoidable adverse impacts are not expected to be significant.

Short-Term Use vs. Long-Term Productivity

All Alternatives

Short-term uses which would cause temporary impacts to air quality would not significantly affect long-term maintenance of air quality.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

No irretrievable or irreversible commitments are anticipated.

Committed Mitigation Measures

For all alternatives, including the Proposed Plan, air quality will be considered for project authorization. Standard mitigating measures, especially revegetation, should be sufficient to protect the air quality in most cases. Mitigations and stipulations on coal leases will meet Office of Surface Mining requirements and Federal, state, and local air quality standards.

Uncommitted Mitigation Measures

All Alternatives

A suggested measure is to install air quality monitoring stations in several areas to obtain measurements of changes in air quality over a period of several years.

LOCATABLE MINERALS

All Alternatives

Locatable mineral activity is governed by the Mining Law of 1872. Under this law the mining claimant has the right to locate, develop, and produce mineral resources on open public land. Mitigation and stipulations can be applied to the claimant, of course, to prevent undue degradation of other resource values. At present no locatable minerals are being produced in the Kremmling Resource Area, although changes in the economy or new discoveries could precipitate renewed interest and production of locatable minerals under all alternatives.

Loss of production could occur due to conflicts with other activities and resources. Of particular interest in this area would be loss of production in wilderness areas and conflicts with coal. However, according to Public Law 585, Multi-Mineral Development Act, the mineral lessee and mining claimant must resolve conflicts between different minerals in the same area themselves. Designation of the Troublesome WSA as a wilderness area under the Natural Environment Alternative would preclude mineral activity by restricting surface occupancy, resulting in permanent loss of production potential.

Livestock grazing and wilderness management prescriptions would not significantly or adversely impact locatable mineral development in the resource area.

Unavoidable Adverse Effects

All Alternatives

Loss of production could occur due to management conflicts with other resources and activities.

Modification of topography and geology due to subsurface mining may cause surface disturbance, which would affect related surface use.

Short-Term Use vs. Long-Term Productivity

All Alternatives

Loss of mineral production could occur in the long term to achieve short-term minerals production due to the number and amount of minerals considered unrecoverable with present mining technology and practices.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

Minerals mined, consumed, or left underground as unrecoverable could be irretrievably lost to future uses.

Committed Mitigation Measures

All Alternatives

Locatable minerals development is regulated by existing Federal policies, guidelines, and regulations, including the Mining Act of 1872 and stipulations for plans of development under the current 3809 regulations.

COAL

Continuation of Present Management Alternative

Current coal production from the two mines on federal leases in the Kremmling Resource Area accounts for the permanent removal of approximately 2 million tons of coal annually from 4,330 acres of leased public lands.

Community expansion and other land use conflicts which reduce or preclude exploitation of mineral resources could constitute an important secondary impact to the area. For example, under this alternative, only about 6,000 out of 226,015 acres of the McCallum Known Recoverable Coal Resource Area (KRCRA) have been committed to a coal land use priority. This could mean that over 200 million tons of coal would be unavailable for production by the mining industry.

Surface mining and subsidence would not necessarily have an adverse effect on topography. To the contary, increased grazing and agriculture could result from slope modification and reclamation.

Proposed Plan

The Proposed Plan would offer sufficient acreage (approximately 45,000 acres) for consideration for future coal leasing to allow for continuation and expansion of the coal industry in Jackson County. The priority areas for future coal leasing are located east of Walden in the area called the McCallum, where coal development is currently taking place, and near Coalmont, where numerous coal leases presently exist and where development previously occurred (refer to Preferred Alternative Map that accompanied the DEIS). These priority areas were determined from current coal inventory data economic indications of interest by industry, and consultation with State and local governments.

Those lands identified as unsuitable for surface mining after application of the coal unsuitability criteria (see Chapter 3) would be excluded from future coal leasing considerations.

The remaining known coal lands would be made available for future leasing only when the priority areas had been depleted or a significant demand was expressed that could not be met by the priority areas. Nonpriority coal lands would be managed as priority areas for oil and gas, livestock, or wildlife.

Preference Right Lease Application (PRLA) C-0125854 would be processed and emergency coal leasing would continue as needed to support existing operating mines. Site-specific restrictions may be imposed to protect the environment or other critical resource values. These restrictions would become part of the lease or approved mine plan.

Energy and Minerals Alternative

Approximately 60,000 acres of land would be committed to a coal priority, resulting in a potentially significant increase in coal production and in the quantity of land leased for coal.

Economic Benefit Alternative

Approximately 107,000 acres of land would be committed to a coal priority, resulting in a potentially significant increase in the number of coal leases and the possible recovery of 275 million tons of coal from the McCallum KRCRA.

Renewable Resources Alternative

Coal leases could be expanded to maintain the existing production of 2 million tons of coal per year.

The increase in coal priority land use to approximately 13,000 acres would result in a potential increase in long-term coal production.

Recreation Alternative

Approximately 13,000 acres of land would be committed to a coal priority, resulting in a potentially significant increase in coal production and the quantity of lands leased for coal. No priority intensive recreational uses occur in coal priority areas.

Natural Environment Alternative

Coal leases could be expanded to maintain the existing 2 million tons of production per year. In addition, committed coal priority land use would be increased to approximately 13,000 acres, resulting in an increase in long-term production.

Livestock Grazing and Wilderness Impacts to Coal

Livestock grazing and wilderness management prescriptions would not significantly or adversely impact coal development under any of the alternatives.

Unavoidable Adverse Effects

All Alternatives

Loss of production could occur due to management conflicts with other resources and activities.

Modification of topography and geology due to subsurface mining and surface disturbance would very likely occur, particularly under the Economic Benefit Alternative, with its potentially huge increases in amount of land mined for coal.

Short-Term Use vs. Long-Term Productivity

All Alternatives

Loss of mineral production could occur in the long term to achieve short-term minerals production, due to the number and amount of minerals considered unrecoverable with present mining technology and practices.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

Minerals mined, consumed, and left underground as unrecoverable could be irretrievably lost to future use.

Committed Mitigation Measures

All Alternatives

Current stipulations governing coal exploration, leasing, and development are considered effective. These include guidelines developed under the Federal Coal Management Program and the Memorandum of Understanding between the Bureau and the Office of Surface Mining.

Standard and special lease stipulations, NEPA compliance, and the approval of a final mine plan are considered committed and effective mitigation.

OIL AND GAS

Continuation of Present Management Alternative

Current oil and gas production from the Kremmling Resource Area is approximately 200,000 barrels of oil and 2,500,000 thousand cubic feet (MCF) of gas per year. Without new fields being discovered and developed, these figures could be expected to drop as present fields near depletion. Presently, approximately 7,800 acres are committed to an oil and gas priority land use.

Activities such as community expansion and other resources can interfere with or preclude oil and gas production, resulting in a negative effect on this resource. However, oil and gas exploration and production can generally be mitigated so as not to entirely deny access to any area.

Proposed Plan, Energy and Minerals, Economic Benefit, Renewable Resources, and Recreation Alternatives

Under these alternatives, impacts to oil and gas could be assumed to remain the same as under the Continuation of Present Management Alternative. In all of these alternatives, lands committed to an oil and gas priority would be increased; however, increased oil and gas production would be dependent on location and discovery, among other things, not merely on the amount of land offered or leased.

Natural Environment Alternative

Under this alternative, loss of production could result due to limited access and more stringent surface occupancy restrictions. This could occur even though the total land committed to an oil and gas priority would be increased to approximately 10,000 acres.

Unavoidable Adverse Effects

All Alternatives

Loss of production could occur due to management conflicts with other resources and imposition of surface occupancy restrictions.

Short-Term Use vs. Long-Term Productivity

Loss of production could occur in the long term to achieve short-term production, due to the possible loss of oil and gas considered unrecoverable with present technology and practices.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

No irreversible or irretrievable commitments of resources have been identified.

Committed Mitigation Measures

All Alternatives

Whenever the lessee or operator of a Federal oil and gas lease decides to drill on the leasehold, all proposed drilling operations and related surface disturbance activities must be approved before entry upon the lands involved. Approval will be in accordance with (1) lease stipulations, (2) Title 30 CFR Part 221, "Oil and Gas Operating Regulations," and (3) "Notice to Lessees No. 6 (NTL-6)", as amended.

PALEONTOLOGY

All Alternatives

Impacts to fossil remains could be caused by all surface and subsurface disturbing activities from all resources, although mineral extraction would have by far the most detrimental effect. Destruction of fossil remains by vandals and amateur collectors due to increased accessibility could also be caused by other resources uses, with the possible exception of wilderness area designation. Although the destruction of fossils of scientific value constitutes the most significant impact to paleontology, the beneficial effect of increased exposure of otherwise hidden fossil remains should be recognized.

Approximately 140,000 acres in the Kremmling Resource Area are underlain by formations known to contain significant paleontological resources.

None of the alternatives, with the exception of the Economic Benefit Alternative, should have any significant effect on paleontology resources. The Economic Benefit Alternative, however, with its possible dramatic increase in coal mining, could significantly affect paleontological resources. Under the Proposed Plan and Natural Environment Alternative the Kremmling Cretaceous Ammonite site would be managed as an RNA, while under the Renewable Resources Alternative it would be managed as an ACEC.

Livestock grazing and wilderness management prescriptions would not significantly or adversely impact paleontological resources.

Unavoidable Adverse Effects

All Alternatives

Loss of fossil remains could occur due to surface and subsurface disturbing activities, especially those resulting from mineral extraction.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

The paleontological resources destroyed by other resource uses and activities would be irretrievably lost.

Committed Mitigation Measures

All Alternatives

Fossil resources are to be afforded consideration under existing regulations and policies, including NEPA; FLPMA; and Bureau policy as expressed in Washington Office Instruction Memorandum No. 79-111: Treatment of Paleontologic Resources in Mining Environmental Statements, Environmental Assessment Records, and Technical Examination Reports and No. 79-267: Paleontology Inventory FY 1979 (classification of areas and required considerations). Also applicable are the proposed rulemakings under No. 82-639/43 CFR Parts 3620, 3630, and 8360.

SOILS

Introduction

Soil can be viewed in two ways. In one sense, soil is a resource required to support the production of biological resources. In another sense, soil is a medium in which engineering activities take place, a construction material or a substance with properties which must be overcome in order to achieve human goals. Land use decisions determine in which of these two ways soil will be approached.

For example, by committing a given land area to community expansion, one ceases to be concerned with soil productivity but becomes concerned with how soil would react as a road base; if soil would corrode buried pipes, wires, or foundations; and similar questions. This impacts soil as a resource because soil productivity in this area is no longer a concern, nor is it protected. Ultimately, as developments allowed by a community expansion decision are implemented, the productivity of the soil is no longer harvested by livestock, wildlife, or machines; soil, as a resource, ceases to exist in areas where the land is occupied by permanent improvements.

In addition to impacts to the soil resource from land use change, soil as a resource can be impacted by harvesting of vegetation (logging or grazing) through compaction or erosion. Fertilization, irrigation, and, in some cases, plowing can beneficially affect soil. Because different soils will react differently to the same treatment and because many different treatment techniques are available to achieve similar results, specific statements as to what will happen to the soil resource because of the implementation of a given alternative cannot be made. Before any on-the-ground improvements are made, however, detailed soils analyses would be made to determine the techniques which are least detrimental.

The recommendation of the Troublesome WSA as not suitable for wilderness designation under all but the Natural Environment Alternative would result in neither significant nor adverse impacts to soils. Conversely, there would be little beneficial impact to the soil resource should the WSA be designated wilderness as proposed in the Natural Environment Alternative.

Continuation of Present Management Alternative

Under the Continuation of Present Management Alternative, the conversion of land to nonagricultural uses is not expected to change in rate. Therefore, there are no foreseen impacts on soils. For the purposes of this discussion, the term *agricultural* is used in the largest possible sense to include production of all biological resources, including livestock, forests, and wildlife. Stipulations on new land use activities would generally be adequate to protect the soil resource. However, under present management, it would be difficult to correct soil problems which may have developed over many years. In addition, little is being done to enhance the productivity of the soil because management emphasis lies elsewhere.

Livestock grazing on the public lands would have the greatest impact to the soil resource under this alternative. No adjustment of livestock numbers would be made, resulting in erosion because some plants important in protecting soil would be con-

sumed, and no intensive grazing management would be undertaken.

Proposed Plan

The Proposed Plan would combine the management emphases of the Economic Benefit, Recreation, and Renewable Resource Alternatives. Livestock numbers would be adjusted downward until such time as forage condition improved. Intensive grazing management practices would be implemented which would help to stabilize the soil. In aggregate, this alternative would benefit the soil resource.

Energy and Minerals Alternative

This alternative would have impacts similar to the Economic Benefit Alternative. However, since oil and gas activity would be favored over coal development, adverse impacts would be more dispersed and lands would be reclaimed more quickly.

Economic Benefit Alternative

This alternative could result in an increase in the rate at which agricultural lands were converted to other uses. Most of this conversion would be because of an increase in coal leasing, so it would represent mostly a short-term change, with land returning to agricultural uses after mining of coal was completed. Since intensive management of rangelands would not occur on coal priority use zones until after coal development was complete, improvement of the soil resource in these areas would be foregone in the short term. The majority of this impact would occur in the North Park area.

Renewable Resources Alternative

Under this alternative, soil stabilization would be favored. Conversion of land from agricultural uses could occur but only at a low rate. Soil productivity would be enhanced whenever possible. It is possible that this alternative would result in a net benefit to the soil resource.

Generally, the grazing program proposed in the Renewable Resources Alternative would be the least impacting to the soil resource because intensive management of livestock would be practiced on the greatest amount of land.

It is important to note that some intensive livestock management practices can impair soil productivity through increasing compaction or erosion (for example, plowing or burning). However, if these practices are properly designed and sites are carefully selected, damage to the soil can be minimized and benefits to the soil resource can be realized.

Recreation Alternative

Under this alternative, conversion of agricultural land to other uses through land disposal in eastern Grand County would have the greatest impact to the soil resource. Development of coal resources in North Park would be more modest than under the Economic Benefit Alternative but of greater extent than under the Renewable Resource Alternative. Overall, adverse impacts to the soil would be greater than under the Renewable Resource Alternative.

Natural Environment Alternative

This alternative would result in the greatest protection of soil from disturbance. However, there would be less benefit to the soil than under the Renewable Resources Alternative because less mechanical stabilization of soil would occur.

Designation of the Troublesome WSA as a wilderness area under the Natural Environment Alternative could provide some protection to the soil resource within the boundaries of the designation. This protection would probably result in a slight beneficial impact to the soil resource.

Unavoidable Adverse Effects

All Alternatives

Short-term increases in soil erosion rates due to surface disturbance would be unavoidable.

Short-Term Use vs. Long-Term Productivity

All major surface disturbing activities, including installation of watershed stabilization structures, oil and gas development, coal mining, and other disturbances, would have a short-term adverse impact on the soils. These short-term uses would not adversely impact the long-term productivity of the soil.

Disposal of land now under BLM administration could result in long-term conversion of land from agricultural to other uses, thus impacting the soil resource. No other long-term effects to soil productivity are anticipated.

Irreversible or Irretrievable Commitments of Resources

Loss of soil due to conversion of agricultural land to other uses is regarded as being irreversible. Erosion losses are considered to be irretrievable.

Committed Mitigation Measures

Mitigating measures will include standard Bureau stipulations and all applicable Office of Surface Mining coal regulations and stipulations.

WATER RESOURCES

Continuation of Present Management Alternative

The major impacts to water quality would be in the grazing and forestry programs. Watershed deterioration has largely been halted by various laws affecting range management over the years, but isolated spots are still being heavily used by livestock. The overgrazing of certain riparian zones affects water quality by decreasing channel stability, leading to increased channel erosion which causes sedimentation.

In certain areas of western Grand County, grazing intensities have impacts on watershed cover and soil infiltration rates; however, the allotment management plan (AMP) for part of this area would mitigate these impacts over time. Deteriorated conditions on unmanaged areas caused by grazing, would result in impacts to the watershed (i.e. reduce vegetation and soil erosion would cause increased sediment).

There is a short-term measurable impact to water quality (sediment concentration) from logging operations and the construction of roads. Surface disturbing activities in the watersheds are detrimental to the enhancement of aquatic wildlife.

Among land activites, the potential construction of new roads would cause adverse localized sediment yield impacts due to increased surface disturbance each year. Because of the lack of site-specific information, exact severity of this impact to water quality cannot be ascertained at this time. Mitigation measures involving proper design and location of roads usually result in only a short-term erosion problem, with conditions stabilizing within 5 years. However, with new right-of-way cases being processed every year, water quality impacts downstream from road construction would persist during the life of the plan, resulting in some sedimentation to reservoirs and irrigation ditches and modification of flood channel capacities.

Public water reserve withdrawals would benefically impact water sources by protecting them from other kinds of development.

Proposed Plan

This alternative would have both beneficial and adverse impacts. Some beneficial impacts would result as the range program expanded its intensive management of grazing, which could reduce grazing intensities in overgrazed areas. Recovery of these areas would improve water quality by increasing watershed cover, enhancing riparian zones, and increasing infiltration rates, all of which could have the combined effect of reducing erosion. A later turnout date would allow further spring growth of vegetation to provide better protection from splash erosion, watershed protection from better developed roads, and reduced soil compaction (resulting in increased infiltration), which results from tramping on wet soil in the spring.

Brush control (vegetation manipulations) could cause short-term water quality impacts due to sedimentation. These impacts would be dependent upon actual acreage treated, location, slope, soil characteristics, rates of recovery, and proximity to perennial streams. Prescribed burning could have short-term impacts to water quality. Studies have shown that prescribed burning increases amounts of phosphorus, potassium percent nitrogen and organic carbon of undeterminable quantities (Gifford 1981). AMPs and related Environmental Assessments would specifically address impacts to water resources.

Forest management would probably reduce areas of clearcuts and shelterwood cuts by less than 5 percent, if at all, compared to the Continuation of Present Management Alternative, resulting in a negligible reduction in water yield.

The Proposed Plan would provide for intensive watershed management plans, with implementation of recommended projects benefiting water quality in the long term. (See the Renewable Resource Alter-

native for details of impacts.) Watershed resources would be specifically addressed in AMPs.

Energy and Minerals Alternative

The proposed development of coal mining could impact water quality. As coal spoil piles would have different aquifer and geochemical properties, leaching could occur and contaminate ground or surface water. Rehabilitation could consume some water if irrigation was needed; channel modification and resulting streambank erosion caused by stream crossings could cause additional sediment loads. Potential spills of fuels or chemicals could pollute surface water. Operating a water supply source could result in consumption of water needed by an existing user. Sewage treatment facilities and leach dumps could impact water quality if any sizeable leakage occurred.

Sediment loads could be increased from any of the surface disturbing activities related to coal mining. Groundwater would be impacted locally around deep mines due to dewatering and aquifer penetration. The current use of groundwater in North Park is for domestic purposes and livestock watering by local ranchers.

This alternative would have the least amount of acreage under intensive range management and may thus allow fewer opportunities for riparian protection. Grazing would continue to impact water resources by heavy grazing, trampling, etc., to riparian zones. The proposed increase of forage use beyond present management may cause deterioration to watershed cover and result in decreased water quality. Increased livestock use would decrease vegetative cover which could expose the watersheds to soil erosion which increases sediments in the streams. The lack of intensive range management practices may cause deteriorated water quality into the long term.

Not recommending the Troublesome WSA for inclusion in the National Wilderness System would not have any significant impacts to water resources.

Economic Benefit Alternative

Coal leasing would be emphasized under this alternative and the number of mines could dramatically increase. The extent and magnitude of residual impacts after mitigation is likely to increase, but it is not known by how much. Types of impacts are detailed under the Energy and Minerals Alternative.

In range management, the Economic Benefit Alternative would have fewer water developments and several thousand fewer acres of vegetation manipulations than would the Renewable Resource Alternative. There may be a short-term impact to watershed protection due to higher initial livestock use levels. However, over the longterm, as intensive management practices are applied, these impacts would be mitigated. However, these range activities would probably affect water resources less than coal leasing operations. Impacts would be dependent on site-specific characteristics, which would be addressed in future AMPs.

Sand and gravel would be at its maximum development under this alternative. The potential for impacts to water quality resulting from sediment discharges from quarries would be at its greatest level, although this cannot be quantified.

Forest management would remain at present levels, so impacts from this alternative would be the same as they are at present.

Not recommending the Troublesome WSA for inclusion in the National Wilderness System would not have any significant impacts to water resources.

Renewable Resources Alternative

Recovery of overgrazed areas through proper allocation of forage would have a beneficial impact on water quality by improving watershed cover. Enhanced riparian zones and increased infiltration rates would have the combined effect of reducing erosion.

The later turnout date would have the beneficial effect of reduced soil compaction by allowing the soil surface to dry out, allowing rainfall to infiltrate the soil at a greater rate, reducing overland runoff, and causing less soil erosion. In addition, a later turnout date would allow further spring growth of vegetation to provide better protection from splash erosion, and watershed protection for better developed roots. AMPs would specifically address water resources in relation to allotments.

Range improvements could have a beneficial impact by reducing sediment yields of watersheds. Developing water facilities and vegetation manipulations under both the range and wildlife programs could affect water resources, depending on their location, size, and number. Developments and improvement projects would reduce soil saturation and recharge alluvial aquifers, sometimes reducing local contribution to streamflow. Fencing of water

sources would often protect them from livestock trampling and enhance natural vegetation cover.

Vegetation manipulations would cause a temporary increase in sediment yield if mechanical treatment was used, chemical pollution if there was an accidental spill or improper use of chemical spraying, and a possibility of phosphorus and nitrate increase if the vegetation was burned. There would be residual impacts even though mitigation measures would reduce their severity.

Not recommending the Troublesome WSA for inclusion in the National Wilderness Preservation System would not have any significant impacts to water resources.

Recreation Alternative

Even though this alternative favors recreational development, impacts to water resources may not result exclusively from this activity. Sediment yield from any kind of surface disturbing activity would be the most significant impact, depending on the mitigation measures to be applied. Potential impacts from energy development due to unavoidable or accidental spills, leaks, or ruptures of oil and gas facilities could be next in significance. However, this latter impact cannot be predicted or quantified.

Increased wetland habitat by means of reservoir construction could impact flood routing, reduce peak flow, and cause sediment transport, generally resulting in less severe floods and reduced sediment yields but with some sediment deposits occurring within the structure. There is a potential for a reduction in water quality (nitrogen and coliforms) due to increased recreational development.

In lands activities, this alternative would likely have similar residual impacts in sediment yield from surface disturbance as would the Continuation of Present Management Alternative. In addition, the coal leasing program and oil and gas leases under this alternative would have similar, but expanded residual impacts (after mitigation) compared to the Continuation of Present Management Alternative, the impact level being in proportion to the additional acres leased. Site-specific impacts would be identified at the leasing stage.

Impacts from range management to water resources are detailed in the Renewable Resource and Natural Environment alternatives.

The forestry program would have an estimated 10 percent reduction from present management in annual clearcut acreage, which could cause reductions in water yield impacts.

Natural Environment Alternative

With fewer surface disturbing actions under this alternative and the protection of environmentally sensitive areas, adverse impacts of sedimentation are expected to be less. Not allowing ORV use in North Sand Hills could increase stabilization of that area and possibly reduce sediment loads in Government and North Sand Creeks.

Impacts from the range program's prescribed burning proposals could have a short-term, but possibly significant, impact to water quality by increasing amounts of phosphorus, potassium, percent nitrogen, and organic carbon. These could cause an algae bloom and possible eutrophication (reduction in dissolved oxygen). Due to the decrease in forage allocation to livestock and immediate initial reductions in AUMs, vegetative cover is expected to increase (more grasses) thus provide better production of watersheds and may result in better water quality (reduced sediments) and less flooding.

Improvements for wildlife habitat/sport fisheries and from watershed management plans would reduce surface disturbance and sediment yield; beneficial impacts would result from the enhanced riparian zones and improved watershed cover.

Wilderness protection for the Troublesome WSA would not be directly significant to water resources. However, the prevention of extensive surface disturbance would be a beneficial impact to water quality by preventing accelerated erosion.

Unavoidable Adverse Effects

All Alternatives

Any form of surface disturbance would expose soil to erosion, which could cause unavoidable sedimentation to streams, rivers, and lakes; the amount would be dependent on local characteristics. Mitigation would reduce this amount, but there would be a short-term impact to water quality during the construction and rehabilitation periods.

Accidential spills and ruptures of any type of fuel or chemical would be considered unavoidable. Coal mines would unavoidably impact local aquifers, though to what extent is not known.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

Soil loss and the corresponding sediment trapped in lakes and reservoirs would be considered irretrievable. Irreversible commitments would probably be limited to aquifer modification by coal mining.

Short-Term Use vs. Long-Term Productivity

All Alternatives

Water, as used in and by the natural environment, is essential for any kind of productivity of living things and is used extensively in both the short and long term. Man's uses of water in the short term often result in a slight drop in quality or quantity; furthermore, man is slowly being limited by water resources in his efforts to achieve long-term productivity.

Committed Mitigation Measures

Standard Bureau regulations as described in "Surface Operating Standards for Oil and Gas Exploration and Development" are the primary source of mitigating measures. Additionally, the Federal Water Pollution Control Act, Clean Water Act, Colorado River Basin Salinity Control Act, Safe Drinking Water Act, Floodplain Management-E011988, and Surface Mining Control and Reclamation Act are applicable.

Other committed mitigation includes compliance with Office of Surface Mining regulations for coal leasing; State Water Quality Standards; U.S. Army Corps of Engineers, Section 404 permit requirements; and applicable Colorado Water laws.

VEGETATION

Introduction

There are two ways in which vegetation would be significantly impacted by land use actions proposed in the alternatives. These would be through:

1. Net changes in productivity; either increase, decrease, or complete loss
2. Net changes in vegetation composition by altering the plant community successional stage

Expected changes in vegetation will be assessed for each alternative using the two parameters mentioned above.

Forest vegetation would not be significantly impacted by any resource programs (including range management) and/or authorizations under any alternative. Bureau resource programs or authorizations either do not occur in forest vegetation areas or have negligible effects on the average yearly allowable cut. Timber management programs produce the only discernable impacts to forest vegetation; however, this management only alters the size, age, and stand productivity of timber, rather than producing any change in the forest vegetation species composition. The Bureau's commitment to revegetation, reforestation, pest control, soil/water control, and rehabilitation further reduce any possible impacts.

The recommendation of the Troublesome WSA as either suitable or nonsuitable for wilderness designation would not significantly, adversely impact vegetation. The suitable recommendation under the Natural Environment Alternative would ensure the preservation of all vegetation resources. The nonsuitable recommendations under the remaining alternatives, including the Proposed Plan, would not seriously impact vegetation, since only a small portion of the WSA is suitable for timber management and no other detrimental activities (minerals development or intensive range or recreation) are foreseen. Multiple use management would ensure adequate consideration of all vegetation.

Continuation of Present Management Alternative

Some significant adverse impacts are expected as a result of continuing present management practices. Under the current livestock grazing authorization of over 45,000 AUM's, net range productivity would decline with no increase in grazing management intensity. Forage allocation levels would be expected to decline to approximately 40,000 AUM's over the long term (15 to 20 years). Four key bunchgrass species of the sagebrush ecosystem (Pine needlegrass, June-grass, Bluebunch wheatgrass, and Idaho fescue) would be expected to decline significantly in both population density and reproduction vigor. Other weed species, including a variety of annual grasses, forbs and woody shrubs

(fringed sagewort and low rabbitbrush) would assume dominance in many of the lower sagebrush communities.

Although some riparian zones are scheduled for protection under this alternative, approximately 80 percent of the riparian stream systems would still be expected to decline in overall productivity due to livestock concentration problems in these areas.

Range management would have to be intensified to correct livestock distribution problems and enhance opportunities for forage plant rest and recovery through the proper design and implementation of grazing plans (AMPs) before increases or even stabilization could be attained in the overall vegetation community.

Other resource area programs would not have a significant impact on the vegetation under this alternative.

Proposed Plan

Under the Proposed Plan no significant adverse impacts are expected from the various proposed resource activities. The beneficial impacts to vegetation associated with the proposed intensive range, forest, and wildlife practices would be comparable to those in the Renewable Resources Alternative.

The most significant impacts would center on the proposed intensive management of 76 grazing allotments that encompass approximately 51 percent of the public land under permit. Intensive range management paractices would be expected to raise the adjusted stocking level of over 39,000 AUMs to a potential level exceeding 54,000 AUMs over the long term (15 to 20 years). This increase in available forage would largely be in key herbaceous (grass and forb) species.

Energy and Minerals Alternative

In this alternative, potential cumulative impacts could occur to vegetation due to the emphasis on oil and gas and locatable mineral exploration and development. Nearly all of the resource area would remain available for oil and gas exploration and development. However, adverse impacts would be dispersed and a significant loss in vegetation productivity would not be expected. The construction of drill pads, roads, and associated support facilities would have the most permanent impacts in terms of losses in long-term productivity. However, over 90 percent of the oil and gas activities would be composed of two acres or less for each site-specific development.

Long term impacts brought about by the range and wildlife programs would be significant under this alternative. With no increase in the intensity of grazing management but an increased initial stocking rate of 15 percent, range vegetation productivity would be expected to decline over the long term (from over 52,000 AUMs to over 48,000 AUMs).

Livestock use would increase in the herbaceous (grass and forb) component of plant communities. The vigor of many herbaceous perennial forage plants would decline and more competitive annual species may invade and even dominate some of the lower, more arid ranges. Additionally, with increased livestock use of herbaceous forage and a declining big game population increases in the density of woody shrubs, particularly big sagebrush, would be expected.

The vigor and stability of riparian stream vegetation would decline on those stream segments not protected from livestock use. The decline in riparian productivity would be expected to occur at a more accelerated rate than in other vegetation types as livestock concentration and use of these areas would increase.

Other resource area programs would not have a significant impact on the vegetation under this alternative.

Economic Benefit Alternative

In this alternative, coal and oil and gas production would be emphasized, primarily in the North Park area. On identified coal and oil and gas lease areas, a net loss in vegetation production would be expected due to the alteration of the sagebrush plant communities on a potential 92 percent of the resource area leased for oil and gas and on the suitable coal production areas of the KRCRA. Depending on the amount of surface mining and drilling activity and the success of reclamation, portions of the sagebrush communities in North Park would remain "mottled" or in various stages of successional development over the long term. On many of the mine sites, successful reclamation would be expected to increase vegetation productivity over that found prior to mining. Full reclamation should be completed within three to eight years after a mine was exhausted. However, success is not guaranteed and this period could be much longer in the harsh climate of North Park.

The adverse impacts of oil and gas exploration and development activities would be the same as

discussed for the Energy and Minerals Alternative. The long-term positive impacts from intensive range management practices would be the same as outlined in the Renewable Resources Alternative. However, less acreage would be intensively managed for these resources in lieu of expanded opportunities for coal development (63 grazing allotments, or approximately 45 percent of the public lands under permit). Intensive range management practices would be expected to raise the adjusted stocking level of over 52,000 AUMs to a potential level exceeding 65,000 AUMs.

Renewable Resources Alternative

In this alternative, the largest acreage of public land would be committed for intensive management under the range, forestry, and wildlife programs. The largest increases in vegetation productivity would be expected under this alternative due to the intensive management practices employed. Such practices would include proper stocking rates of livestock, forage and habitat improvement projects (e.g., brush eradication and riparian habitat protection/enhancement), adjustments in season of use for livestock, and implementation of grazing systems (activity plans).

Available livestock forage would be expected to gradually increase from an adjusted level of over 39,000 AUMs to a potential level of over 56,000 AUMs as intensive management practices were implemented on 81 grazing allotments over a 10-year period. The intensive range management practices, considered collectively, would be expected to show significant positive changes in vegetation composition and production, primarily in the sagebrush-dominated steppe zones of North Park and Middle Park.

On approximately 55 percent of the land under grazing management, a gradual conversion from a dense brush overstory to a more dispersed brush/grass association would be expected, with a substantial long-term increase in herbage cover and production. Improvement in the forage production and condition of riparian vegetation would also be optimized under this alternative through intensive management.

No other significant or large-scale impacts on vegetation from other resource programs are expected under this alternative.

Recreation and Natural Environment Alternatives

In these alternatives, the various resource activities would have the least potential adverse impacts on vegetation due to more stringent environmental protection stipulations, which would allow for a more stable trend in plant community successional development.

Specifically, in the Natural Environment alternative, vegetation productivity would be enhanced while maintaining as natural a setting as possible. Intensive range, forest, and wildlife practices would occur as under the Renewable Resources Alternative but would be modified to lessen adverse impacts, particularly major disturbances to established vegetation. The most significant modification is the proposed sagebrush eradication, which would be restricted to the use of prescribed burning only and be limited to substantially less acreage than the treatments proposed in the Renewable Resources Alternative. Despite this restriction, intensive range management practices would be expected to raise the adjusted stocking level of over 31,000 AUMs to a potential level exceeding 47,000 AUMs over the long term (15 to 20 years) in both alternatives.

Unavoidable Adverse Effects

Energy and Minerals, Economic Benefit and Continuation of Present Management Alternatives

In the Energy and Minerals and Economic Benefit alternatives the major impacts to vegetation as a result of increased open-pit coal mining and oil and gas exploration would be adverse over the short-term as vegetation was completely removed on these areas for the life of the mines and oil and gas development sites. However, these impacts would not be adverse in the long-term, as existing mitigation measures and reclamation would provide for the return of the sites to a level of productivity equal to or greater than that which existed prior to development.

In the Energy and Minerals and Continuation of Present Management alternatives unavoidable adverse impacts to some vegetation species may occur. Grazing management would not be intensified under these alternatives and certain target bunchgrasses may be substantially diminished in population density in key grazing areas.

Proposed Plan, Renewable Resources, Recreation, and Natural Environment Alternatives

Under the four management alternatives listed above, no major unavoidable adverse impacts to the vegetation resource are expected, except for cumulative impacts of coal development, oil and gas exploration, and major land rights-of-way actions. These actions would primarily impact the open sagebrush ecosystems and would usually be well dispersed, with the exception of coal development.

Short-Term Use vs. Long-Term Productivity

Continuation of Present Management

As previously mentioned, existing grazing authorizations of approximately 45,000 AUMs along with no increase in grazing management will have a combined affect on long-term range productivity. There will be an overall decline in the populations of existing key forage species as well as a trend toward denser brush overstories in many of the sagebrush communities. These changes are expected to be most evident on lower ranges that are critical for spring livestock use and big game winter use.

Other land uses, principally energy development activities, would not be expected to severely impact the sagebrush ecosystem on an overall basis. These type of impacts would be regionally isolated, such as in the case of coal development, or dispersed, as in the case of oil and gas exploration. Protective mitigation and reclamation stipulations would provide for restored productivity over the long-term.

Proposed Plan, Renewable Resources, Recreation, and Economic Benefit Alternatives

Long-term increases in vegetation productivity are expected by implementing intensive management practices. The most substantial increases are expected in net herbage production in the open sagebrush communities. Complementing this increase would be a change in composition from a brush dominated plant communities to a mixed brush/grass association.

Energy and Minerals Alternatives

The major short-term use, coal mining, would result in the loss of native vegetation for the life of developed mines. The effects this loss would have on the long-term productivity of an area would be largely dependent on the success of reclamation. A practical time frame for reclamation would be three to eight years after mining was terminated.

The long-term impacts from adjustments in the livestock grazing program would be potentially significant under this alternative. The initial livestock allocation of over 52,000 AUMs would be expected to decline to a level of nearly 48,000 AUMs. This decline would be manifested primarily in the sagebrush plant communities by an increase in woody vegetation and corresponding decrease in available herbaceous forage. Riparian zones and othr "key grazing" areas would continue to decline in overall productivity as livestock distribution problems remain unregulated due to a lack of intensive management.

Natural Environment Alternative

This would be same as the Renewable Resource Alternative, although significant additional beneficial increases in vegetation production would be expected along ephemeral stream channels and gullies as a result of intensive watershed development in "highly erosive" areas. This would specifically occur in the priority (sensitive) watershed area north of Kremmling (see Natural Environment Alternative Map that accompanied the DEIS).

Irreversible or Irretrievable Commitments of Resources

No vegetation species or plant communities would be irretrievably lost under the proposed levels of management, except for the possibility of unforseen impacts to sensitive, threatened, or endangered species.

Committed Mitigation Measures

All Alternatives

Stipulations which are currently in effect and which have been placed on the various resource activities and authorizations are adequate to protect against any major adverse changes in native vegetation communities.

All site-specific projects (such as range improvements) will be separately analyzed by Environmental Assessments at the Activity Management Plan level for all alternatives.

WILDLIFE AND THREATENED/ ENDANGERED PLANTS AND ANIMALS

Continuation of Present Management Alternative

There are no significant adverse impacts to wildlife or wildlife habitat and threatened and endangered species under this alternative. It would maintain wildlife habitat and population production at current levels. This alternative would emphasize wildlife habitat production more than the limited management under the Energy and Minerals and Economic Benefit Alternatives, but less than would the intensive management under the Recreation, Renewable Resources, and Natural Environment Alternatives.

Wildlife habitat management would continue at current levels. Habitat improvement projects would be implemented in the North Park HMP area, while improvements in Middle Park would be limited to small-scale aquatic projects. Habitat monitoring would continue at current small-scale levels.

Coordination with other resources to assure consideration of wildlife habitat values in management actions would continue. The resource programs most likely to cause significant wildlife habitat modification would be forestry, minerals, and range management. The extent of impacts would be dependent on the extent of development. Forage would be allocated for big game populations at Colorado Division of Wildlife (DOW) 1980 census levels. Most wildlife populations would continue to be stable at current levels.

Threatened or endangered species habitats would be protected and monitored, particularly for bald eagles, *Haliaeetus leucocephalus*, and the scorpion plant, *Phacelia formosula*.

Proposed Plan

Wildlife habitats and populations would be expected to increase in this alternative, except in the coal development area. The extent of the coal impact would be dependent on the extent and timing of development. Forage would be allocated for big game at population levels consistent with the Colorado Division of Wildlife's long-term population objectives if sufficient forage was also available to support current livestock production.

Wildlife habitat/range management conflicts could occur in areas designated for sagebrush eradication. Wildlife habitat would also be lost temporarily in areas of coal development. Net results of sagebrush eradication and coal development could be reductions in certain wildlife populations and habitat values associated with the sagebrush ecosystem (sage grouse breeding, nesting, and wintering areas and big game range), both on a site-specific basis and offsite; however, mitigation could acceptably reduce impacts to wildlife habitat.

If forest management practices complemented wildlife habitat values, an increase in habitat quality would result from this alternative. Forest management practices and impacts expected to complement wildlife habitat would include additional edge effect, road closures, and increased forage production. However, adverse impacts, such as loss of snags, access to previously undisturbed areas, and displacement of certain species during critical seasons, could occur.

Disposal or lease of scattered public land tracts could adversely impact wildlife on these lands by making possible new land uses that would be different from, or in conflict with, present use as wildlife habitat. Threatened and endangered species habitats would be protected and monitored, particularly for bald eagles, *Haliaeetus leucocephalus*, and the scorpion plant, *Phacelia formosula*. The North Park *Phacelia* site would be managed as a research natural area (RNA) to enhance protection of this species.

Energy and Minerals Alternative

Of all the alternatives formulated, the Energy and Minerals Alternative would have the greatest potential to adversely impact wildlife habitat. Wildlife habitat would be lost. The degree of loss would depend on extent, location, and timing of developments. Those wildlife species associated with the sagebrush ecosystem would be the most adversely impacted because energy development would take place in this ecosystem. Stipulations on development activities would be used to reduce the energy development impacts on wildlife habitat. Mitigation would also involve habitat similar to habitat lost to development, with measures to increase the carrying capacity of unimpacted habitats being implemented. While mitigation could reduce impacts to wildlife and habitat, it is not known if a maximum development situation could be adequately mitigated. Habitat improvement projects would be avoided in areas with high potential for energy development if loss of the project could occur.

Sufficient forage to support the Colorado Division of Wildlife's 1980 big game population levels would

not be available in this alternative. The forage needed to support the Division's 1980 population levels would be allocated to livestock rather than big game. Selection of this alternative would require a reduction in big game numbers below the 1980 population levels. Populations would be reduced to 7,000 deer, 1,000 elk and 400 antelope.

Threatened or endangered species habitats would be protected and monitored, particularly for bald eagles, *Haliaeetus leucocephalus*, and the scorpion plant, *Phacelia formosula*.

Economic Benefit Alternative

This alternative would have the potential for adversely impacting wildlife, being second only to the Energy and Minerals Alternative in this respect.

Emphasis on the development of commodity resources such as oil, gas, coal, livestock forage, and timber could adversely impact wildlife habitat. The degree of impact would depend on the extent, location, and timing of mineral development, timber harvest, and livestock forage production. Critical habitats such as winter ranges, breeding habitats, and migration corridors could be lost or modified if this alternative were selected. The extent of this loss would depend on the extent of development and mitigation and the success of reclamation. Stipulations on development activites would be utilized to minimize adverse impacts to wildlife habitat. Mitigation methods to increase carrying capacities of undisturbed similar habitats would also be developed and implemented to offset habitat loss.

Habitat improvement projects would be avoided in areas with high potential for energy development if loss of the project could occur.

The potential for loss of sagebrush habitat would increase in this alternative because range management has proposed large acreages of sagebrush eradication. Habitat values such as sage grouse breeding, nesting, and wintering areas and big game winter range could be lost if sagebrush eradication occurred and suitable replacement habitat was not available. Mitigation could adequately reduce and/or replace significant losses.

Sufficient forage to support the Colorado Division of Wildlife's 1980 big game population levels would not be available in this alternative. The forage needed to support the Division's 1980 population levels would be allocated to livestock rather than big game. Selection of this alternative would require a reduction in big game numbers below the 1980 population levels. Populations would be reduced to 7,000 deer, 1,000 elk and 400 antelope.

Threatened or endangered species habitats would be protected and monitored, particularly for bald eagles, *Haliaeetus leucocephalus*, and the scorpion plant, *Phacelia formosula*.

Renewable Resources Alternative

There are no significant adverse impacts to wildlife or wildlife habitat under this alternative. It emphasizes wildlife habitat and population production more than all others, with the exception of the Recreation and Natural Environment Alternatives. Wildlife habitats and populations would be expected to increase because forage would be allocated for big game at population levels consistent with the Colorado Division of Wildlife's long-term population objectives if sufficient forage was also available to support current livestock production. Habitat improvement projects are also expected to increase wildlife populations.

Wildlife habitat/range management conflicts would occur in areas designated for sagebrush eradication. Net results of sagebrush eradication could be reductions or increases in certain wildlife populations, such as antelope, mule deer, sage grouse, etc., associated with the sagebrush ecosystem. Mitigation to reduce and/or replace significant losses would be necessary for authorization of development.

If forest management practices complemented wildlife habitat values, an increase in habitat quality would result from this alternative. This increase would be dependent on the extent and location of timber practices and the success of reclamation efforts. Forest management benefits expected to complement wildlife habitat would include additional edge effect, road closures, and increased forage production.

Coordination with Bureau resource development programs would adequately ensure the mitigation of significant impacts. Threatened or endangered species habitats would be protected and monitored, particularly for bald eagles, *Haliaeetus leucocephalus*, and the scorpion plant, *Phacelia formosula*. The North Park *Phacelia* site would be managed as a ACEC.

Recreation Alternative

There are no significant adverse impacts under this alternative. The Recreation Alternative provides the greatest emphasis on wildlife habitat management and population production. Wildlife habitat

and population production would be emphasized in this alternative more than in any of the others. Habitat conditions would be improved to support increased populations of wildlife species with high recreation values. Conflicts with other resource management activities would be resolved in favor of wildlife habitat where feasible, and mitigated if not.

Forage would be available to support big game populations above the Colorado Division of Wildlife's long term objective levels. This forage would be available as a result of a decrease in forage allocated to livestock in this alternative. Big game populations would be expected to increase above the Division of Wildlife's objective levels. Populations would be increased to 15,000 deer, 3,700 elk and 1,300 antelope.

Habitat losses would occur in areas subjected to sagebrush manipulation to enhance range management, in watershed improvement project areas, and in mineral development areas. Mitigation for habitat losses due to change in vegetation composition would be mitigated by the resource activity responsible for the losses.

Threatened or endangered species habitats would be protected and monitored, particularly for bald eagles, *Haliaeetus leucocephalus*, and the scorpion plant, *Phacelia formosula*.

Natural Environment Alternative

There are no significant adverse impacts to wildlife habitat and production under this alternative. Fluctuations of wildlife habitat and population conditions would depend on natural occurrences, such as mild or severe winters and natural regeneration.

Forage would be available to support big game populations above the Colorado Division of Wildlife's long term objective levels. This forage would be available as a result of a decrease in forage allocated to livestock in this alternative. Big game populations would be expected to increase above the Division of Wildlife's objective levels. Populations would be increased to 15,000 deer, 3,700 elk and 1,300 antelope. Habitat improvement projects would involve natural rather than mechanical methods. Burning rather than chaining or plowing would be utilized to change vegetation structure, water developments would be constructed on a smaller scale (no large reservoirs), etc.

Habitat management for threatened or endangered (T/E) plants and animals and other nongame species would be emphasized in this alternative. Results of this alternative would be a slight improvement in habitat conditions for recreational species and an increase in associated recreation activities. An increase in protection of T/E species habitats would result in an increase in population size. Considerations of wildlife values would become a limiting factor in authorizations and would reduce any adverse impacts to an acceptable level. The North Park *Phacelia* site would be managed as a Research Natural Area.

Impacts from Wilderness Recommendations

The Troublesome Wilderness Study Area (WSA) would be recommended as nonsuitable for wilderness designation under six of the seven alternatives:

1. Continuation of Present Management
2. Proposed Plan
3. Energy and Minerals
4. Economic Benefit
5. Renewable Resources
6. Recreation

Recommendation of the Troublesome WSA as nonsuitable for wilderness would not significantly impact the wildlife resource. The Troublesome WSA does not have potential for significant development of other resources, such as forestry and minerals, which would conflict with the existing wildlife habitat values.

Limited public access is expected to continue. Therefore, impacts to wildlife and habitat are not expected to be significant.

The Troublesome WSA would be recommended as suitable for wilderness designation under the Natural Environment Alternative. Designation of the Troublesome WSA would not significantly impact wildlife. The Troublesome WSA is essentially a wilderness now because of lack of resource development and poor access. Wildlife habitat is currently in good condition; improvement projects would not be necessary.

Unavoidable Adverse Effects

Continuation of Present Management Alternative

1. Reductions in some habitat types and increases in other types due to changes in vegeta-

tion composition and structure as a result of specific management actions would occur.

2. Wildlife populations and habitat conditions could decrease due to natural occurrences.

3. Loss of wildlife habitat and production on lands developed for energy mineral production would constitute an adverse impact.

4. Reduction in quantity of habitat available to those species associated with the sagebrush ecosystem would occur.

5. Reduction in quantity of habitat available to those species dependent on the lodgepole pine ecosystem would occur if regeneration was unsuccessful.

Proposed Plan

Impacts would be the same as those listed under the Continuation of Present Management Alternative. Cumulative impacts to wildlife and associated habitat would occur as energy mineral development increases. These cumulative impacts would become critical depending on intensity and timing of mineral development.

Energy and Minerals Alternative

Impacts would be the same as under the Continuation of Present Management Alternative, except impacts would be even more extensive due to the increase in energy development and the reduction in big game forage to support livestock grazing. Cumulative impacts to wildlife and associated habitat would occur as energy mineral development increases. These cumulative impacts would become critical depending on intensity and timing of mineral development. Sufficient forage would not be available to support big game populations at or above 1980 levels.

Economic Benefit Alternative

Impacts would be the same as under the Continuation of Present Management Alternative but more widespread due to an increase in energy development, timber harvest, and range improvement impacts. Big game populations would be reduced below 1980 levels to support an increase in livestock grazing. Cumulative impacts to wildlife and associated habitat would occur as energy mineral development increases. These cumulative impacts would become critical depending on intensity and timing of mineral development. Sufficient forage would not be available to support big game populations at or above 1980 levels.

Renewable Resource Alternative

Impacts would be the same as under the Continuation of Present Management Alternative, except that more impacts would occur due to increased forest and range management.

Recreation Alternative

1. Impacts would be the same as under the Continuation of Present Management Alternative, with the extent of impacts being dependent on the extent of development. Big game populations would increase above the Colorado Division of Wildlife's objective levels because additional forage would be available due to reductions in livestock.

2. Loss of some nontarget wildlife species and habitats in the development of habitat improvement projects could occur.

Natural Environment Alternative

Impacts would be the same as under the Continuation of Present Management Alternative, except that there would be fewer impacts because of decreased energy/economic development activities. Big game populations would increase above the Colorado Division of Wildlife's objective levels because additional forage would be available due to reductions in livestock.

Short-term Use vs. Long-Term Productivity

All Alternatives

1. Duration of energy development impacts on wildlife habitat would depend on the success of reclamation. Restoration of wildlife habitat values associated with developed lands could take 30 years.

2. Adverse impacts from sagebrush eradication would be long term for those wildlife species dependent on the sagebrush ecosystem.

3. Range improvement projects would enhance wildlife habitat over the long term if constructed to mutually benefit wildlife. Duration of the benefit would depend on the effective life of the project. The short-term impact of these projects would be loss of use of the area by wildlife during the construction period.

4. The short-term effect of energy development and timber harvest would be abandonment of the

area by most wildlife during development. Most wildlife would be expected to return to the areas at the conclusion of development and successful reclamation. Wildlife abandonment of the development of area would not adversely impact wildlife where suitable habitat is available adjacent to development areas. If suitable habitat is not available, wildlife populations would decline in the development areas.

5. Big game populations would increase or decrease depending on the alternative selected. Potential big game population changes would depend on forage allocations that favor either livestock or big game.

In summary, the long-term wildlife habitat productivity would depend on two major factors. These factors are the extent and timing of development and the success of reclamation efforts where key wildlife habitats have been developed.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

Wildlife and wildlife habitat are renewable resources. There would be no irreversible or irretrievable commitment of wildlife habitat resources if stipulations and mitigations were utilized to reduce or minimize adverse impacts by development activities.

Uncommitted Mitigation Measures

Continuation of Present Management, Proposed Plan, Renewable Resources, and Natural Environment Alternatives

1. Utilize habitat improvement techniques, such as range fertilization, vegetation manipulation, reseeding, etc., to increase carrying capacity of unimpacted habitat.

2. Avoid critical habitats, such as big game winter ranges, sage grouse breeding habitats, and riparian habitats when implementing vegetation manipulation projects.

3. Establish monitoring studies to determine actual impacts, both cumulative and short-term, of habitat reduction activities, such as coal mining and sagebrush eradication.

4. Develop stipulations that will reduce adverse impacts to wildlife habitat caused by mineral development, timber harvest, and livestock grazing improvement practices.

5. Assure that reclamation practices are compatible with wildlife habitat values associated with public lands prior to mineral development.

6. Allow strip mining to occur in rectangular strips, with undisturbed strips of equal size left between the disturbed sites. To maintain the sagebrush ecosystem, these undisturbed sites should remain undisturbed until the disturbed areas are successfully reclaimed with sagebrush.

VISUAL RESOURCES

Continuation of Present Management Alternative

Under the Continuation of Present Management Alternative, the emphasis is given to maintaining the visual quality in sensitive Class II visual areas. (See Chapter 3 for a description of these classes.) Mitigation, rather than exclusion, would be the primary means of reducing visual contrast in these areas. Mitigating measures designed to maintain existing visual quality would be used where practical on all other public lands in the resource area.

Timber harvesting is the major activity that has affected and would continue to affect the visual quality of sensitive visual areas. Road building and clearcutting, the preferred harvest method in lodgepole pine, are the major impacts on visual quality. However, these impacts are mitigated by designing clearcuts to blend in with existing openings, limiting the size of clearcuts to generally less than 40 acres, or the use of partial cuttings. Since much of the BLM managed forest land is located in the transition zone between open sagebrush and dense forests, these measures are usually effective.

Other activities with the potential to create major visual contrasts (e.g., coal mining and major powerlines) generally occur in nonsensitive areas which can accommodate such contrasts, e.g., Class III or Class IV areas. The impacts in these areas are mitigated through application of standard stipulations, which can usually meet the visual contrast requirements of these classes. Thus, these activities do not represent a significant adverse impact to visual resources. If present management practices were to continue, the visual character of the public lands in the resource area would not significantly change.

Proposed Plan

The impacts of the Proposed Plan are the same as under the Renewable Resources Alternative (see below).

Energy and Minerals and Economic Benefit Alternatives

If either the Energy and Minerals Alternative or the Economic Benefit Alternative were implemented, the impacts to visual resources would be the same as under the Continuation of Present Management Alternative.

Renewable Resources Alternative

Under the Renewable Resources Alternative, approximately 10,000 acres less than under current management would be intensively managed for forestry. This acreage is composed largely of scattered tracts located in adverse locations (less than 40 acres, no access, etc.); harvesting would not represent significant adverse impacts to visual resources if it did occur. Its exclusion from timber harvesting, however, would help to maintain existing visual quality, which represents an overall beneficial impact to visual resources. Otherwise, the impacts would be the same as under the Continuation of Present Management Alternative.

Recreation Alternative

The impacts under the Recreation Alternative would be similar to the Renewable Resources Alternative, except that restrictions or mitigating measures designed to protect recreation values would be imposed on all activities in addition to the standard stipulations.

Natural Environment Alternative

The Natural Environment Alternative affords the most protection to visual resources because all Class II areas would receive management emphasis through imposition of restrictions or mitigating measures imposed on all activities. In addition, the acreage under intensive forest management would be reduced the same as under the Renewable Resources Alternative. The Troublesome WSA, if designated as wilderness by Congress, would be managed as Class I, which affords the most protection to visual resources.

Unavoidable Adverse Effects

There would be no significant unavoidable adverse effects to visual resources under any of the alternatives. The landscape would be altered on a site-specific basis under all alternatives. In most cases, adverse impacts would be adequately mitigated so that proposed uses could meet the allowable contrast requirements of the various visual management classes. More flexibility in terms of restrictions would be allowed under the Continuation of Present Management, Energy and Minerals, Economic Benefit, and Renewable Resources Alternatives, allowing for more change in visual quality than under the Recreation or Natural Environment Alternatives, where visual resources would be a management emphasis.

Short-Term Use vs. Long-Term Productivity

In most cases, impacts to visual resources are short term. The impacts of timber harvesting moderate as timber grows back, the impacts of coal mining are substantially reduced as reclamation takes effect, etc. The only major long-term effect would result from the siting of a major powerline or some other permanent facility in Class II areas. Such actions could permanently alter the landscape. However, mitigating measures could usually reduce the impact to allowable contrast levels.

Irreversible or Irretrievable Commitments of Resources

The only irreversible or irretrievable commitment of the visual resource would be where permanent facilities, such as powerlines, could not, after application of mitigating measures, meet the allowable degree of contrast established for Class II visual management areas.

Committed Mitigation Measures

Standard mitigating measures for the protection of visual resources are identified in the manage-

ment categories section of Chapter 3. Under all alternatives, the proposed range improvements would meet the contrast requirements of the various visual management classes through application of the standard mitigating measures.

RECREATION

Continuation of Present Management Alternative

Under the Continuation of Present Management Alternative, the upper Colorado River and North Sand Hills would continue to be managed as special recreation management areas (SRMAs). Off-road vehicles would continue to be allowed on the North Sand Hills, with restrictions to protect cultural resources and the dune environment. In the SRMAs, other uses, such as forestry, oil and gas development, and range improvements would be allowed as long as they were compatible with overall recreation management objectives.

For the upper Colorado River, the proposed Azure Project would be consistent with this alternative as long as floatboating opportunities were maintained on the river below the project area, including Little Gore Canyon. Impacts to recreation opportunities would be loss of the primary river access site at the Pumphouse and approximately 1-1/2 miles of river for floatboating. The recreation activity opportunities on this 1-1/2 miles would change from river related activities to flat water related activities. The setting opportunities (roaded-natural) would remain the same. Assuming that (1) adequate flows would be maintained (1000 cfs minimum), (2) raft launching could be accommodated at the base of the dam, and (3) adequate river/reservoir access and camping facilities were provided to replace the Pumphouse, the impacts to recreation could be adequately mitigated and the impacts would not be significant.

If these conditions could not be met, then the Azure Project would represent significant impacts to recreation opportunities, both in terms of quantity (sufficient flows) and quality (loss of Little Gore Canyon to floatboating) of recreation opportunities. As a specific proposal for the Azure Project was not available at the writing of this draft plan, specific impact analysis will have to done in the EIS on the project itself.

The remainder of the public lands would receive limited management for dispersed recreation. Generally, dispersed recreation is compatible with other resource activities *except* active coal mining and other active mineral development. Under present levels, these activities, including range management for livestock, do not represent major adverse impacts to recreation opportunities. In the past, dispersed recreation has benefited from activities such as forestry, which have opened up significant amounts of previously inaccessible land to the public for a wide variety of recreation opportunities.

The recreation opportunities (activities, settings, and experiences) on the public lands would remain essentially unchanged if present management were continued, with the exception of the Troublesome WSA. This area would be opened for intensive forestry management, which would alter the type of recreation opportunities available on some 12,000 acres of public land. The recreation setting opportunities of the Troublesome WSA would change from a combination of semiprimitive motorized and nonmotorized to primarily roaded natural and semiprimitive motorized. The recreation activity and experience opportunities would change correspondingly.

The Troublesome WSA is the only area on public lands in the resource area that provides recreation opportunities in a primitive nonmotorized setting. However, when the availability of these opportunities on U.S. Forest Service lands in the region is taken into account, the loss is not significant.

Proposed Plan

The impacts of this alternative would be the same as those discussed above for the Continuation of Present Management Alternative.

Energy and Minerals Alternative

The Energy and Minerals Alternative differs from the Continuation of Present Management Alternative in that the main portion of the Troublesome WSA would be designated as a special recreation management area (SRMA), in addition to the upper Colorado River and North Sand Hills, and would be managed for primitive and backcountry recreation in the existing settings. The WSA would be maintained in essentially its present condition, except that motorized access would be allowed into either the western or southwestern portion of the unit, depending on the location of public access. Recreation use of the Troublesome WSA would increase substantially under this alternative due to provision for access. The Troublesome WSA currently receives minimal recreation use due to lack of public access.

Adverse impacts resulting from increased recreation use would include (1) disruption of wildlife, (2) compaction of soils and loss of vegetation on trails and around campsites, (3) increased human waste and trash, (4) pollution of streams, and (5) increased wildfire protential. These could be adequately mitigated through management actions and are, therefore, not considered significant.

The Energy and Minerals Alternative represents an intermediate impact to hunting opportunities in North Park due to expansion of coal development, which would, however, occur to a lesser degree than in the Economic Benefit Alternative.

Aside from the Troublesome WSA and coal development areas, recreation opportunities in the Kremmling Resource Area would remain essentially the same as under present management.

Economic Benefit Alternative

The Economic Benefit Alternative would represent the greatest adverse impact to hunting opportunities in North Park due to potential loss of wildlife populations resulting from expanded coal development. Otherwise, the impacts of this alternative, including those of the Azure Project, would be the same as under the Continuation of Present Management Alternative.

Renewable Resources Alternative

Under the Renewable Resources Alternative, the North Sand Hills would be designated an area of critical environmental concern (ACEC). Motorized recreation activities would be allowed in the ACEC only if compatible with the primary management objectives of protecting cultural resources and the dune environment. More restrictions than are currently in place or prohibiting motorized vehicles altogether may be necessary to meet these objectives. If vehicles were banned, the only opportunity in Colorado for using a motorized vehicle in sand dune environment would be lost. Otherwise, the impacts of this alternative would be the same as under the Continuation of Present Management Alternative.

Recreation Alternative

The Recreation Alternative represents the optimum management of public lands in the resource area for recreation opportunities. All areas with significant opportunities to meet current or anticipated demands would be designated as SRMAs. Other resource uses would be allowed in the SRMAs as long as they were compatible with recreation management objectivies. The Azure Project would be compatible with this alternative only if recreation opportunities could be maintained below the dam.

Outside the SRMAs, recreation opportunities would remain essentially the same as under current management, except that recreation would be considered a primary reason for access acquisition and road construction. There would be an increase in deer hunting opportunities as a result of managing the public range for optimum wildlife populations. The Recreation Alternative would be the most beneficial to recreation opportunities on public lands because potential adverse impacts resulting from other resource uses would be restricted or mitigated, especially in SRMAs.

Recreation use would increase the most under this alternative due to provision of access and management designed to enhance recreation opportunities. Adverse impacts associated with this increased use would be similar to those discussed under the Energy and Mineral Alternative but would be more widespread. Management actions would be designed to adequately mitigate these impacts.

Natural Environment Alternative

The Natural Environment Alternative represents maintenance of the status quo for recreation except for the North Sand Hills. The natural area status of the North Sand Hills would be retained and ORVs would be prohibited on the dune area. The only opportunity in Colorado for using motorized vehicles in a sand dune environment would be lost. The Azure Project in any form would not be compatible with the objectives of this alternative due to changes in both the environment and in recreation opportunities. With the exception of the upper Colorado River, this alternative would emphasize the provision of dispersed recreation opportunities in settings similar to existing conditions. Hunting opportunities would benefit from management of the public rangelands to optimize wildlife populations.

Unavoidable Adverse Effects

The Continuation of Present Management, Economic Benefit, and Renewable Resources Alternatives represent the greatest potential for adverse impacts to recreation due to emphasis on other resource activities. The major areas where this would

occur would be the potential coal expansion areas in North Park and the Troublesome WSA in Middle Park, where recreation opportunities would be lost or altered. The adverse impacts under the Energy and Minerals Alternative would differ in one respect: the northern area of the Troublesome WSA would be managed as an SRMA, thus reducing adverse impacts from other resource activities in that area.

Short-Term Use vs. Long-Term Productivity

Intensive forestry management of the Troublesome WSA, expansion of coal development in North Park, and construction of the Azure Project would be the significant long-term commitments affecting existing recreation resources and productivity. These commitments would occur in all alternatives, but the degree would vary, depending on the emphasis of the alternative.

Irreversible or Irretrievable Commitments of Resources

In all alternatives except the Natural Environment Alternative, the only irreversible or irretrievable commitment of recreation resources to uses other than existing recreation opportunities would be the Azure Project.

Committed Mitigation Measures

Standard Bureau stipulations and regulations will apply. Refer to the planning criteria for further details.

WILDERNESS

Continuation of Present Management Alternative

Under the Continuation of Present Management Alternative, the Troublesome Wilderness Study Area (WSA) would be recommended as nonsuitable for wilderness designation. Continuing interim management for the protection of wilderness values would not be allowed under law. The suitability or unsuitability of the WSA for wilderness must be determined through this resource management plan.

If existing management were continued, portions of the WSA would be subject to intensive forest management. Management practices would include road building and timber harvest. Such activities would permanently alter the wilderness characteristics (i.e., naturalness, opportunities for solitude, primitive/unconfined recreation) in portions of the area to the point where these characteristics would no longer be present. The wilderness characteristics would remain largely unaffected in the northern portions of the area between the drainages of Rabbit Ears and Troublesome Creeks.

Intensive forestry management would also open the western portion of the area to motorized recreation. Provision of public access resulting from intensive forest management would substantially increase the recreation use of the area. Problems associated with increased use, e.g., litter, unattended campfires, motor vehicles off roads and trails, etc., would increase correspondingly.

Range management would continue at essentially the same level, with some minor projects such as fences and stock ponds being constructed in the area. These projects would have a negligible impact on wilderness characteristics. No other resources, including energy and minerals, have been identified as having moderate to high potential for development within the WSA boundaries.

Proposed Plan

Under the Proposed Plan, the majority of the Troublesome WSA would be managed intensively for livestock grazing. The western portion would be managed intensively for forestry. Intensive range management would primarily involve construction of fences and stock ponds and would not significantly alter the existing situation. In those areas on the western fringe where intensive forestry practices would be implemented, the wilderness characteristics would be permanently altered to the point where they would no longer be present. Intensive forestry management would open the western portions of the area to motorized recreation and increase recreation use through provision of public access. The wilderness characteristics of the 6,000 acre block of public lands in the "V" between Rabbit Ears and Troublesome Creek would remain essentially unchanged.

Energy and Minerals Alternative

The impacts of the Energy and Minerals Alternative would be essentially the same as under the Recreation Alternative, except that portions of the areas on the west and south would be intensively managed for forestry. This would alter, and could even destroy, the wilderness characteristics of these areas.

Economic Benefit Alternative

The impacts of the Economic Benefit Alternative would be the same as those described for the Continuation of Present Management Alternative.

Renewable Resources Alternative

The impacts of the Renewable Resources Alternative would be the same as those under the Preferred Alternative.

Recreation Alternative

The Recreation Alternative represents the least degree of adverse impact to wilderness characteristics of all the nonwilderness alternatives. Under the Recreation Alternative, the Troublesome WSA would be managed as a special recreation management area (SRMA) for primitive and backcountry recreation opportunities. The area would be maintained in essentially its present condition, except that motorized access would be allowed into either the western or southwestern portion of the unit, depending on the location of public access.

Recreation use would increase most under this alternative due to provisions for access and the SRMA designation, which would attract use to the area. This would represent a significant change, as the area is presently little used for recreation because of a lack of public access. Adverse impacts resulting from increased recreation use would include (1) disruption of wildlife, (2) compaction of soils and loss of vegetation on trails and around campsites, (3) increased human waste and trash, (4) pollution of streams, and (5) increased wildfire potential. Other uses, such as forestry (selective cuttings), oil and gas development, and range improvements, would be allowed only as long as they were compatible with the recreation management objectives; therefore, they would not represent major impacts to wilderness characteristics.

Natural Environment Alternative

The Natural Environment Alternative would recommend the Troublesome WSA as suitable for wilderness designation, pending further mineral evaluation as required by FLPMA. Should Congress designate the area as wilderness, the wilderness values would receive statutory protection. No valid existing rights are known to exist which would significantly degrade wilderness values or impair the Bureau's ability to manage the area as wilderness.

Increased use resulting from wilderness designation and provision of access would change the use patterns from the existing situation. Impacts from increased recreation use would be similar to those identified under the Recreation Alternative. Overall, the Natural Environment Alternative would be beneficial to wilderness values because of statutory protection and management objectives designed to protect those values.

Unavoidable Adverse Effects

Under all alternatives, except the Natural Environment Alternative, wilderness values would be adversely impacted due to intensive management practices for other resources. The Continuation of Existing Management and Economic Benefit Alternatives represent the most extensive alteration of wilderness characteristics. The Renewable Resources Alternative and the Proposed Plan represent an intermediate level of adverse impacts, while the Recreation and Energy and Minerals Alternatives represent the least degree of adverse impact of all the alternatives that recommend the Troublesome WSA as nonsuitable. The Natural Environment Alternative, while having the potential to adversely impact wilderness values because of increased recreation use, would have a net beneficial impact to wilderness values because of statutory protection and management actions designed to mitigate any adverse impacts.

Short-Term Use vs. Long-Term Productivity

All of the alternatives, except the Natural Environment Alternative, represent both a short-term and long-term commitment to manage the Troublesome WSA for resource values other than wilderness. In the short term, the area would remain essentially the same until access could be acquired and intensive management plans prepared. In the

long term, productivity in terms of the wilderness resource would decline and could be lost entirely.

The Natural Environment Alternative represents a long-term commitment to protection of wilderness values.

Irreversible or Irretrievable Commitments of Resources

All alternatives, except the Recreation and Natural Environment Alternatives, represent an irreversible commitment of portions of the area to uses other than wilderness, resulting in the associated loss of wilderness values. In all alternatives, the area between Rabbit Ears and Troublesome Creeks would remain essentially unchanged. Under the Recreation Alternative, the character of the entire area would show little change over present conditions; wilderness characteristics would thus not be irretrievable.

While wilderness designation is viewed as a permanent form of management, it is the prerogative of Congress to revoke wilderness designation and open an area to multiple use management. Thus, the Natural Environment Alternative does not represent an irreversible or irretrievable commitment of the area to wilderness management or a permanent loss of nonwilderness resources.

Committed Mitigation Measures

Refer to management level discussion for wilderness management in Chapter 3, standard Bureau regulations and stipulations, and the USDI-BLM Wilderness Management Policy, September, 1981.

CULTURAL RESOURCES

Continuation of Present Management Alternative

Under this alternative, cultural resources in the resource area would not be significantly adversely impacted, given compliance with existing regulations and the present emphasis of the Bureau's major program policies. The management of these resources is largely in support of other impacting programs and authorizations.

Significant adverse impacts to cultural resources are those that destroy or substantially disturb cultural remains without benefit of at least some level of evaluation. All surface disturbing actions have the potential to cause adverse impacts, though in different ways because of the independent development of Bureau regulations and legislation which has emerged to meet different program needs.

Cultural resources in the resource area are of low visibility, with little potential for general public consumption, which largely eliminates intensive management of the resource. Only protection and avoidance are available as options.

An exception is the Windy Gap Site area, which has potential for contributing new and unique information on prehistoric lifestyles. The Bureau has placed an emergency protective withdrawal on the area until further uses can be determined and implemented. Cultural resource management plans for sites meeting National Register of Historic Places (NRHP) criteria assure similar consideration. Identification and evaluation of cultural resources for planning or predevelopment data collection also occurs in response to projected management trends. This is considered beneficial because it aids project location and adds to knowledge.

Cultural resource inventory reports are on file in the Kremmling Resource Area Office. The recommendation of the Troublesome WSA as unsuitable for wilderness designation would not constitute a significant adverse impact due to this area's low potential for energy or timber development, currently limited access, dispersed recreational use, and limited range management.

Proposed Plan

There would be no significant adverse impacts to cultural resources under this alternative. Any adverse impacts that occurred could be legally mitigated. Avoidance of significant cultural remains would be emphasized.

Impacts in the North Park energy/economic areas would be similar to those under the Energy and Minerals and Economic Benefit Alternatives in regard to potential coal and oil and gas lands available for lease and development. Significant cultural resource sites are either unsuitable for coal development or would have no surface occupancy stipulations placed on them.

Realty actions, especially rights-of-way and disposals, would have potentially the greatest negative impacts. Lands suitable for disposal are in relatively small, scattered, largely unmanaged tracts.

The majority of right-of-way actions throughout the resource area would tend to adversely impact

cultural resources in the long run, if avoidance was not a feasible mitigation. However, salvage excavation would preserve some cultural remains.

The BLM Windy Gap sites are blocked lands which are more easily managed and are currently protected by an emergency protective withdrawal. Directed research goals are being formulated for these sites.

The management of the North Sandhills as a formal SRMA, instead of as an ACEC, would allow ORV use on the open sand areas while avoiding cultural resource exclosures. Detection and use supervision and maintenance of barriers, along with public information, would probably continue to be the extent of management, though uses under the SRMA would be re-evaluated through the recreation area management plan. Sites are adequately protected during high-use ORV periods by exclosures and use detection. Incidental instances of disturbances by ORVs are minor and unavoidable. There is no evidence of any other man-caused disturbances.

The recommendation of the Troublesome WSA as not suitable for wilderness designation would not cause adverse impacts on any cultural resources that may be present. The proposed use of the area for multiple use management of renewable resources or energy development would include consideration for cultural resources. Lack of access and the present, generally low priority for the prevalent renewable resource or energy programs ensure a continued low level of impacts in the area.

Energy and Minerals Alternative

There would be no significant, adverse impacts under this alternative that could not be mitigated. Cultural resources would potentially undergo the second highest level of negative impacts (next to the Economic Benefit Alternative) under this alternative. Impacts to cultural resources would increase in direct proportion to increases in energy development.

Another potentially negative impact is locatable mineral development, which comes under the authority of the Mining Act of 1872 and is only minimally checked by Bureau compliance and the 3809 Regulations. However, interest in locatable minerals is not expected to increase during the life of the plan, though this alternative maximizes the potential for their development.

An increase in energy minerals development would lead to an increase in sites located, with an attendant increase in unsuitable, avoidance, and no-surface-occupancy areas. In instances where significant resources could not be avoided, salvage would likely be the mitigation employed.

Cultural resource management would remain a support program to assure minimum legal compliance. In order to facilitate energy development, BLM would be expected to generate cultural resource inventories prior to industry application to aid in locating development. Other program implementation could be undertaken in conjunction with normal compliance procedures, especially for range management and improvements.

Economic Benefit Alternative

Because it supports the most actions with desparate or negative consideration of cultural resources (ROW's, land disposal) and the most surface disturbing actions (development of coal or oil and gas), the potential for adverse impacts to cultural resources is the greatest under this alternative; however, adverse impacts will still be insignificent. There would be no significant, adverse impact that could not be legally mitigated. A conflict between actions to be taken and protection of cultural resources has the highest potential for occurrence in this alternative, since immediate, relatively short-term economic gains would take preference over the preservation of cultural resources. Avoidance would not be practical, so loss or salvage of these cultural resources may be the only level of management under this alternative.

Large-scale economic and/or energy development could generate BLM-sponsored inventory and evaluation in response to land use planning decisions and/or industry/applicant demands for cultural resources information. This would be beneficial, as sites would be located and evaluated. Information would be gained if only to be used for project locations and to be given limited distribution.

However, minimum legal compliance would remain the emphasis of cultural resource management under this alternative.

Renewable Resources Alternative

Cultural resources would not be significantly adversely impacted under this alternative. Impacts would be similar to the Continuation of Present Management Alternative, but they would be intensified somewhat due to increased range management and wildlife habitat improvements. As these programs are Bureau initiated, cultural resources compliance would be assured. All other program

emphases and/or authorizations would be the same as under the Continuation of Present Management Alternative.

All impacts to cultural resources under this alternative could be mitigated. Cultural resources management would continue to be a support compliance oriented program. The North Sand Hills Natural Area would be designated as an ACEC to protect its geologic and cultural values. The sites within this area would be nominated to the NRHP as a district, and a cultural resource management plan would be implemented.

Recreation Alternative

No significant adverse impacts to cultural resources would occur under this alternative. This second highest (next to the Natural Environment Alternative) intensive management level of cultural resources beyond prescribed protection and legal compliance would result in most of the impacts listed under the Continuation of Present Management Alternative. Significant cultural resources would become a limiting factor for authorization and project approval, so compliance with legislation and protection (the Bureau's basic cultural resources management program) would be upheld for both Bureau initiated programs and authorizations. Public information dissemination through the Colorado State BLM Office's Cultural Resources Series publications would be emphasized for significant resources. Resources with high visibility or public interest would be managed for public information and education.

As recreation values are stressed under this alternative, both the North Sand Hills and the Troublesome WSA would be managed as special recreation management areas (SRMAs). Continued monitoring and use supervision of protected sites in the North Sand Hills and the Troublesome WSA, low development potential, remoteness, and inaccessibility would adequately reduce impacts in these areas. Recreation management of sites (interpretation) is not anticipated; little is foreseen beyond maintenance, monitoring, and information dissemination. Sites associated with current SRMAs could be emphasized through NRHP nominations, e.g., North Sand Hills sites and the Upper Gore Canyon Historic site (Denver and Rio Grande/Western Railroad).

Benefits to cultural resources would include BLM supported inventories and studies in support of SRMA designations and the dissemination of public information.

Natural Environment Alternative

No significant adverse impacts to cultural resources would occur. This alternative represents the optimum extent of cultural resource management. Negative impacts would be similar to those under the Continuation of Present Management Alternative but would be potentially the least of all the alternatives, given the fact that cultural resource considerations would become a limiting factor for authorizations.

Avoidance through project redesign and no surface occupancy stipulations would be used to the greatest extent under this alternative. Cultural resources would be managed in compliance with legal requirements; for public information, education, and interpretation; and for seeking new knowledge through research and evaluation.

The recommendation of the Troublesome WSA as suitable for wilderness designation would be, for the most part, compatible. Public access into the area could lead to unauthorized collection of artifacts. Significant benefits would result from cultural resource investigations in this potentially rich area and the restriction of major surface disturbing authorizations. The management of the North Sand Hills as an outstanding natural area to protect and enhance geologic and cultural values beyond their current, largely protective stance would be highly beneficial.

Bureau programs would provide for the consideration of cultural resources, so compliance is assured. The range and wildlife management programs' use of prescribed burns and less disruptive construction techniques would have less potential for adverse impacts.

Increasing knowledge of cultural resources through research would be actively pursued under this alternative. Both the general public and scientific/academic community would benefit.

Cultural resource management would be optimized under this alternative. All of BLMs assumed roles for protection, preservation, enhancement, and development could be realized.

Unavoidable Adverse Effects

Under all alternatives, these impacts could occur:

1. Loss of subsurface cultural remains with little or no surface cultural manifestations

2. Loss of identified or unidentified cultural sites due to unauthorized or unsupervised actions

3. Loss of detailed information due to accepted mitigation (use of salvage instead of complete, research-oriented excavation)

The extent of consideration for, and final disposition of, cultural resources depends more on the type of action and its authorization than on the impact on the resource itself. Certain extremely disruptive actions, such as surface coal mining, have extensive mitigation to the point of making site areas unsuitable for surface mining. Other actions, notably rights-of-way and land disposals, can be equally disruptive. If project parameters cannot avoid even significant sites, then these sites can be mitigated through salvage, with detailed information being lost in the process.

The Economic Benefit Alternative would have the potential for generating the most unavoidable adverse impacts because it has the potential to cause the most surface disturbing actions. The Energy and Minerals, Renewable Resources, and Continuation of Present Management Alternatives represent progressively lower levels of unavoidable, adverse impacts due to the amount and types of actions and emphasis on mitigation, which tends to give cultural resources more consideration. The Recreation and Natural Environmental Alternatives represent scenarios where unavoidable adverse impacts would be lessened due to the emergence of cultural resources as a limiting factor for authorizations. The Natural Environment Alternative has the fewest unavoidable adverse impacts, since it contains the optimum balanced management of cultural resources.

The Proposed Plan contains elements of the Economic Benefit, Energy and Minerals, Renewable Resources, and Continuation of Present Management Alternatives, which places the level of unavoidable adverse impacts second only to the Economic Benefit Alternative.

Short-Term Use vs. Long-Term Productivity

Short-term uses are defined as authorizations that impact cultural resources without giving adequate consideration to cultural resources' long-term benefit of providing knowledge and land use planning information. Cultural resource management itself can produce negative short-term uses when sites are avoided, with no research to exploit the protected resource.

An alternative that supports relatively short-term uses, with limited concern for the long-term productivity of affected resoures, is the Economic Benefit Alternative, which maximizes relatively large-scale, immediate, short-term actions to quickly benefit a depressed local and regional economy. The kinds of actions supported here largely do not provide for the long-term productivity of cultural resources.

The Energy and Minerals, Proposed Plan, Renewable Resources, and Continuation of Present Management Alternatives represent progressively lower levels of short-term use affecting long-term production. Their impacts are less than under the Economic Benefit Alternative because of more effective mitigation, increased consideration of cultural resources, and the lesser number of surface disturbing actions. The Recreation and Natural Environment Alternatives represent alternatives with cultural resources as a limiting factor, which would lessen adverse impacts. Cultural resources management itself also appears as a short-term protective use to provide for later, long-term benefits from research.

The Natural Environment Alternative represents the optimum, most balanced management emphasis that provides both short-term use (protection) and long-term productivity (research).

The Proposed Plan maximizes a combination of short-term uses which would provide minimally for the long-term productivity of cultural resources. This alternative would protect and manage sites that are significant but would not seek out and manage for potentially significant finds or knowledge.

Irreversible or Irretrievable Commitments of Resources

All Alternatives

Subsurface cultural remains which include few or no surface components may be lost forever or irreparably disturbed by approved authorizations. The most significant, informative sites often contain intact, subsurface cultural remains which can be irreversibly and irretrievably lost if not afforded some level of evaluation and protection.

Mitigation oriented salvage excavation and even detailed research oriented excavations irreversibly and irretrievably commit cultural resources. Once a site is excavated, it is more or less exhausted.

As the majority of actions are mitigable through avoidance and through salvage as a last resort, there are no apparent significant levels of irreversible/irretrievable impacts in any alternative. The

Economic Benefit Alternative would exhibit the greatest number of potential losses due to the potential for the most actions under which these losses could occur.

The Energy and Minerals, Proposed Plan, Renewable Resources, Continuation of Present Management, Recreation, and Natural Environment Alternatives (in descending order) contain virtually similar levels of irreversible/irretrievable impacts despite different emphases and levels of mitigation.

Committed Mitigation Measures

All Alternatives

Standard stipulations based on existing regulations, legislation, guidelines, policies, memoranda of agreement, and program emphases would be effective. Major regulations and stipulations include 36 CFR 800, 36 CFR 63 - NRHP Criteria, Coal Unsuitability Criteria #7 and Standard Stipulation #14, Oil and Gas Surface Occupancy Stipulations, and compliance with NEPA and CEQ guidelines. Procedural compliance would increase with the number of actions, along with the time needed for processing. The number of actions would be dependent on the amount of development proposed under each alternative.

Avoidance of significant sites is the preferred mitigation.

BLM and applicant sponsored inventory would increase with numbers of actions. Benefiting programs and/or actions would be expected to fund and support cultural resource inventories.

ECONOMICS

Only one element in the resource management plan would cause a significant change in any part of the resource area. That would be the possibility of leasing a tract for coal mining in North Park, which would significantly impact the town of Walden and Jackson County. A statistical summary of the economic impacts of the alternatives is given in Table 4-1.

TABLE 4-1 -- ECONOMIC IMPACTS SUMMARY SHORT-TERM

	NO ACTION ALTERNATIVE			ENERGY MINERALS/ ECONOMIC BENEFIT ALTERNATIVE			PROPOSED/RENEWABLE RESOURCE ALTERNATIVE			RECREATION/NATURAL ENVIRONMENTAL ALTERNATIVE		
	1983	1988	1993	1983	1988	1993	1983	1988	1993	1983	1988	1993
Industry Sales (000)												
Agriculture	$6,300	$5,300	$4,300	$6,300	$7,838	$6,838	$6,300	$6,268	$5,268	$6,300	$4,741	$3,741
Forestry	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,152	6,152	6,100	6,354	6,354
Mining	63,600	263,600	265,200	63,600	279,100	280,700	63,600	263,600	265,200	63,600	263,600	265,200
Recreation	36,800	45,200	53,700	36,800	45,200	53,700	36,800	45,200	53,700	36,800	45,200	53,700
Employment												
Grand County	3,570	3,900	4,300	3,571	3,906	4,300	3,571	3,904	4,300	3,571	3,905	4,308
Jackson County	700	730	760	700	810	900	700	732	762	700	736	766
Wage & Salary Income (000)												
Grand County	$42,900	$46,400	$51,000	$42,920	$46,470	$51,000	$42,920	$46,460	$51,000	$42,920	$46,460	$51,120
Jackson County	10,600	11,100	11,700	10,600	14,700	15,300	10,600	11,140	11,720	10,600	11,140	11,790
Population												
Grand Division	5,880	6,590	7,450	5,880	6,590	7,450	5,880	6,590	7,450	5,880	6,590	7,450
Kremmling Division	2,150	2,160	2,170	2,153	2,174	2,170	2,153	2,168	2,170	2,153	2,168	2,189
Jackson County	1,590	2,010	2,100	1,950	2,320	2,410	1,950	2,015	2,105	1,950	2,021	2,114
Additional Housing Needs (Cumulative)												
Grand County	210	470	800	211	475	800	211	473	800	211	470	800
Jackson County	30	60	90	30	170	200	30	62	90	30	60	90

[1]Several small changes occur in employment, income, population and housing figures without comparable changes in industry sales. Those changes result from additional BLM contracting and would affect only the local construction industry, which is not included in this table because it is not considered a part of the resource area's economic base.

[2]Agricultural sales figures in this table differ from ranch gross sales figures in the grazing program analysis because different sources of data were used. Figures in this table are obtained from an input-output model of the Kremmling area, while figures in the grazing analysis are based on a statewide ranch survey. Proportionate changes are the same in both.

[3]These decreases in sales result from an assumed reduction in BLM timber sales under these alternatives. Industry sales are reduced in proportion to the supposed drop in timber supply. In fact, local sawmills would probably obtain timber from outside the resource area, adding to their costs but not reducing their sales and employment.

The recommendation of the Troublesome WSA as not suitable for wilderness designation would not significantly beneficially or adversely impact the economic structure of the region, the resource area, or the immediate area of Grand County involved.

Continuation Of Present Management Alternative

All of the changes described under this alternative are expected to occur without regard to any BLM actions under this RMP. They would not depend on use of BLM land and are not impacts of the RMP. The purpose of this section is to describe the economic setting in which the actions of the RMP would take place. There is, however, one instance in which a significant development would be prevented under this alternative, that being the coal mine mentioned above. The only coal resources sufficient for such a mine are on public land, and BLM action (as would occur under the Energy and Minerals or Economic Benefit Alternatives) would be required to enable any additional coal production to take place.

Growth in the resource area's economic base is expected to be concentrated almost entirely in the tourist industry. Between 1983 and 1993, sales in the recreation oriented sectors are projected to expand almost 50 percent.

Continued growth of the eastern slope population belt and further expansion of east Grand County's skiing facilities will be the primary source of increased sales to tourists, although there should also be gains in summer vacation visits and the development of recreation and retirement homes. Practically all of this activity will take place in eastern Grand County, which is the only part of the resource area where sizeable growth is projected.

The mineral industry will show a small increase, all of it in the energy sector. Exploration activity is taking place in the oil and gas fields and on the Rabbit Ears Range, and there is continued interest in the area's coal deposits. A rapid expansion of mineral production is unlikely, however, due both to current softness in the petroleum and coal markets and the limitations and costs of transporting products, particularly coal, from this remote area. Therefore, mineral industry sales are expected to remain at about their current level. Almost all of this activity will take place in Jackson County, providing the basis for a small increase in population. Grand County's only important mineral-related operation, the AMAX Henderson Mill, is expected to recover from its current slump and maintain its previous level of output, helping to stabilize the county's economy.

Recovery from the present depression is also expected for the lumber industry, but little or no further growth is anticipated. Interest rates are expected to fall to at least a level where the present unsatisfied demand for housing will stimulate another round of construction. Nevertheless, a large growth in timber production is unlikely because of the small supply of sawtimber, the slow reproduction rate, and shipping costs. The industry is located mostly in western Grand and Jackson Counties and will serve to maintain population stability in those areas.

Area ranching is coming under increasing pressure, both from the long-term price-cost squeeze and from conversion of land to other uses. A number of ranches have been converted in recent years, mostly to recreational uses and largely in Grand County. No slackening in the demand for land in choicer locations is foreseen, and agricultural costs show no sign of stabilizing. As a result, the long-term downtrend in ranching activity is projected to continue, with agricultural sales in 1993 at a level about 30 percent below those of 1983 (in constant dollars). Population in the ranching areas, primarily in western Grand and Jackson Counties, will decline at a much slower rate, however, since many ranchers will remain in the ranching business on a part-time basis as long as they can supplement their income with outside work.

Four major construction projects complete the economic picture for the 10-year period of analysis: the Windy Gap Dam just outside Granby, the Azure Dam west of Kremmling, Tri-State Generation Company's 345 kV transmission line across western Grand County, and the Silver Creek Ski Development east of Granby. Although construction schedules - and even project feasibility in some cases - are still uncertain, it appears likely that these developments will be spread over the next 10 years, with

the Windy Gap, Azure, and Tri-State projects being built in the early to mid-1980s and the Silver Creek development extending into the late 1980s and early 1990s. These developments should maintain a stable level of construction activity.

Trends in employment, wage, and salary income, and in local government revenues and expenditures will follow the patterns set by the various industry growth rates. The only area that will experience rapid growth is eastern Grand County, and those communities will be facing continuing needs to expand their facilities and services. In other parts of the area, population should remain sufficiently stable to prevent present debt burdens from becoming excessive.

Proposed Plan

Since the Proposed Plan combines the proposed actions of the Energy and Minerals, Economic Benefit, and Renewable Resources Alternatives, its economic effects would be a composite of those three. By providing for the leasing of additional coal resources it could cause the same significant impacts on Walden and Jackson County that are described under the Energy and Minerals and Economic Benefit Alternatives. It would also result in similar minor losses to wildlife and hunting. However, long-term deterioration of range conditions would be far less under this alternative. In other respects, it would be the same as the Renewable Resources Alternative, with a small, if any, reduction in timber offerings and a slightly higher level of BLM contracting. As noted earlier, the only action that would create significant economic impacts would be the leasing of coal.

Energy And Minerals And Economic Benefit Alternatives

Since these two alternatives would have virtually the same economic effects, they are described together. Along with the Proposed Plan, they would be the only alternatives to cause a significant change in the area's economy, that being the potential opening of a new coal mine on BLM-leased land in Jackson County. If such a mine were developed, it would have several significant impacts on Walden and Jackson County. First, operations employment at a mine producing one million tons per year (the size assumed) would reach about 100, with a peak work force of 40 to 50 being required for construction. These new jobs would represent about a 20 percent increase in Jackson County's employment and, because of the relatively high wages paid in construction and mining, a gain of around 30 percent in wage and salary income. The mine would pay a total of approximately $3.3 million annually in ad valorem and severence taxes and Federal royalty. Of that amount, some $640,000 would accrue or be returned to Jackson County. Walden would receive an additional $90,000 annually in property and sales taxes induced by growth plus its severance tax share. However, a 25 percent increase in population could create capital improvement needs in Walden totaling as much as $1 million.

No significant changes would occur in range and timber management under these alternatives. However, the reduced level of range management would permit a continued deterioration in the rate of forage production so that, unlike the other alternatives, the capability of the range to support livestock production would be lowered. These impacts, which are described under the grazing program, would not be economically significant. Wildlife losses, resulting mainly from increased mining, would have a minor effect on hunting. A small increase in BLM construction contracting would be likely in the middle and late 1980's, ending around 1990. Again, neither the wildlife nor contracting impacts would be significant.

Renewable Resources Alternative

This alternative would have no significant economic effect on the area, either positive or negative. A small reduction in the amount of timber offered for sale could have a slightly depressing effect on the lumber industry. However, as noted in Table 4-1, the sawmills would more likely go outside the resource area to obtain needed supplies, with little change occurring in industry sales and employment. A slightly higher level of BLM contracting would be planned, particularly in range and watershed improvements. Otherwise, activities in the range, minerals, recreation, and other BLM programs would continue in the same manner as under the Continuation of Present Management Alternative, or the changes would be so small as to cause few economic ripples.

Recreation and Natural Environmental Alternatives

These two alternatives are similar enough in their economic consequences that they can be described together. Like the Renewable Resources Alternative, their impacts on the local economy

would all be insignificant, but some impacts would have a slightly more depressing effect on local economies than those of the other alternatives.

Designation of the Troublesome WSA as wilderness under the Natural Environment Alternative would have an insignificant economic effect on the area. As explained in the Affected Environment, no resource values would be foregone. Inclusion of the area in the wilderness system would attract visitors to it, assuming access was provided, but the increase would constitute a negligible portion of the local recreation industry.

Annual numbers of visitors are estimated at 2,700 in 1988, increasing to 7,100 by 1993, using a time series model developed for the U.S. Forest Service (Jungst 1978). The estimates, of course, assume both designation and availability of access by that time. Resource values gained, based on recreationists' willingness to pay (Walsh, Gillman, and Loomis 1981), would be about $40,000 annually in 1988 and about $100,000 in 1993. Direct and indirect benefits to local business, derived from an input-output study of the Kremmling region (McKean and Weber 1981), would total about $10,000 in 1988 and $30,000 by 1993. Compared to the estimated $2.4 million in local sales to recreationists in 1979, the addition would be insignificant.

A further decrease in the amount of timber offered for sale would occur in order to enhance environmental and recreation objectives. However, it should again be pointed out that the statistical analysis probably exaggerates the economic impact that this reduction would cause.

BLM contracting would be at the slightly higher level described for the Renewable Resources Alternative until around 1990. Recreation programs would be affected in two different ways. A reduction in dispersed recreation would result from closure of the North Sandhills to off-road vehicles, while an increase would likely occur should the Troublesome WSA be designated as part of the wilderness system. In both cases, however, the probable effect would be little more than a shift in the location and type of activity, since the total number of recreation visits to the resource area is determined by factors largely unaffected by BLM programs. None of the above effects would have economic significance.

Grazing Program: All Alternatives

The grazing program would not significantly affect the resource area as a whole, but it would significantly affect some individual ranchers. There is considerable variation between the alternatives. Estimates of the short-term and long-term effects of each alternative are given in Tables 4-2 through 4-11.

TABLE 4-2 -- COMPARISON OF GRAZING PROGRAM ALTERNATIVES

CHANGES UNDER OTHER ALTERNATIVES

	Short Term				Long Term					
	No Action	Energy Minerals/ Economic Benefit Alternative	Proposed/ Renewable Resources Alternative	Recreation/ Natural Environment Alternative	No Action	Energy Minerals Alternative	Economic Benefit Alternative	Proposed Alternative	Renewable Resource Alternative	Recreation/ Natural Environmental Alternative
Ranch Gross Sales ($000)	15,503	765	−112	−958	239	726	1,833	818	1,310	540
Ranch Net Income ($000)	1,773	2,080	1,893	1,691	1,937	2,042	2,341	2,176	2,188	2,053
Resource Area Business Sale ($000)	352,877	14,924	12,290	9,715	13,295	14,759	18,186	16,321	16,548	14,285
Resource Area Employment	4,630	98	81	64	88	97	120	108	109	94
Resource Area Population	10,770	221	182	144	198	218	270	243	245	212
Assessed Valuation, All Ranches ($000)	10,420	38	−2	−34	2	26	77	44	51	22
Resource Area Property Tax Revenue ($000)	8,996	2	0	−2	0	2	5	3	3	1

TABLE 4-3 -- PROJECTED RANCH OPERATOR DATA AND CHANGES [1]

ENERGY MINERALS/ECONOMIC BENEFIT ALTERNATIVES SHORT-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	7,491	7,504	14,995	$28,465	$1,224,000	$16,558	$712,000
2	61	18,302	26,502	44,804	56,246	3,431,000	5,787	353,000
3	16	5,034	6,246	11,280	81,750	1,608,000	24,625	394,000
4	17	12,649	27,042	39,691	235,588	4,005,000	15,588	265,000
5	5	3,842	15,603	19,445	714,600	3,573,000	258,400	1,292,000
8	3	5,334	3,125	8,459	809,000	2,427,000	279,000	837,000
Total	145	52,652	86,022	138,674		16,268,000		3,853,000
Change in secondary busines sales generated by ranching								2,538,000
Change in resource area total business sales								14,924,000
Change in resource area total employment								98
Change in resource area population								221
Change in assessesd valuation, all ranches								38,000
Change in resource area property tax revenue								2,000

[1]Changes from Table 2-23.

TABLE 4-4 -- PROJECTED RANCH OPERATOR DATA AND CHANGES [1]

PROPOSED PLAN/RENEWABLE RESOURCES ALTERNATIVE SHORT-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	4,872	4,877	9,749	$24,977	$1,074,000	$16,047	$690,000
2	61	14,132	21,101	35,233	51,672	3,152,000	3,639	222,000
3	16	4,478	5,545	10,023	89,938	1,439,000	24,375	390,000
4	17	10,144	20,248	30,392	227,118	3,861,000	15,294	260,000
5	5	3,590	14,577	18,167	699,000	3,495,000	255,800	1,279,000
8	3	2,510	1,651	4,161	790,000	2,370,000	275,000	825,000
Total	145	39,726	67,999	107,725		15,391,000		3,666,000
Change in secondary business sales generated by ranching								968,000
Change in resource area total business sales								12,290,000
Change in resource area total employment								81
Change in resource area population								182
Change in assessed valuation, all ranches								−2,000
Change in resource area property tax revenue								0

[1] Change from Table 2-23.

TABLE 4-5 -- PROJECTED RANCH OPERATOR DATA AND CHANGES [1]

RECREATION/NATURAL ENVIRONMENT ALTERNATIVES SHORT-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	3,697	3,705	7,402	23,389	$1,006,000	$15,819	$680,000
2	61	11,414	17,138	28,552	48,459	2,956,000	2,131	130,000
3	16	3,533	2,742	6,275	93,625	1,498,000	23,875	382,000
4	17	7,723	13,595	21,318	215,941	3,671,000	14,824	252,000
5	5	3,089	11,960	15,049	644,600	3,223,000	250,200	1,251,000
8	3	1,849	2,571	4,420	730,333	2,191,000	256,333	769,000
Total	145	31,305	51,711	83,016		14,545,000		3,464,000
Change in secondary business sales generated by ranching								559,000
Change in resource area total business sales								9,715,000
Change in resource area total employment								64
Change in resource area population								144
Change in assessed valuation, all ranches								−34,000

TABLE 4-5 -- PROJECTED RANCH OPERATOR DATA AND CHANGES [1]—Continued

RECREATION/NATURAL ENVIRONMENT ALTERNATIVES SHORT-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
Change in resource area property tax revenue								−2,000

[1] Change from Table 2-23.

TABLE 4-6 -- PROJECTED RANCH OPERATOR DATA AND CHANGES[1]

NO ACTION ALTERNATIVE LONG-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	5,631	5,639	11,270	$29,705	$1,096,000	$16,740	$693,000
2	61	14,602	21,693	36,295	61,674	3,162,000	8,323	237,000
3	16	4,217	5,223	9,440	93,176	1,548,000	23,828	388,000
4	17	10,180	21,747	31,927	234,714	3,909,000	15,546	261,000
5	5	3,483	14,114	17,597	777,040	3,664,000	269,088	1,308,000
8	3	2,718	1,224	3,942	828,503	2,363,000	283,186	823,000
Total	145	40,831	69,640	110,471	15,742,000		3,710,000	
Change in secondary business sales generated by ranching								1,578,000
Change in resource area total business sales								13,295,000
Change in resource area total employment								88
Change in resource area population								198
Change in assessed valuation, all ranches								2,000
Change in resource area property tax revenue								0

[1] Changes from Table 2-23.

TABLE 4-7 -- PROJECTED RANCH OPERATOR DATA AND CHANGES[1]

ENERGY AND MINERALS ALTERNATIVE LONG-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	6,914	7,729	14,643	$38,156	1,218,000	$17,972	711,000
2	61	16,935	24,868	41,803	70,387	3,344,000	9,693	312,000
3	16	4,818	5,971	10,789	98,833	1,592,000	24,452	392,000
4	17	11,934	25,495	37,429	255,408	4,078,000	16,356	268,000
5	5	3,655	14,786	18,441	758,610	3,512,000	261,098	1,282,000
8	3	4,508	2,113	6,621	892,080	2,485,000	297,083	849,000
Total	145	48,764	80,962	179,726		16,229,000		3,815,000
Change in secondary business sales generated by ranching								2,450,000
Change in resource area total business sales								14,759,000
Change in resource area total employment								97
Change in resource area population								218
Change in assessed valuation, all ranches								26,000
Change in resource area property tax revenue								2,000

[1] Changes from Table 2-23.

TABLE 4-8 -- PROJECTED RANCH OPERATOR DATA AND CHANGES[1]

ECONOMIC BENEFIT LONG-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	9,152	9,169	18,321	$45,699	1,325,000	$19,072	727,000
2	61	23,445	33,598	57,043	89,218	3,789,000	21,222	521,000
3	16	6,654	8,289	14,943	116,883	1,728,000	26,445	407,000
4	17	15,814	32,961	48,775	298,091	4,428,000	18,027	282,000
5	5	3,976	16,194	20,170	781,662	3,617,000	269,876	1,300,000
8	3	6,492	2,919	9,411	967,714	2,449,000	314,052	877,000
Total	145	65,533	103,130	168,663		17,336,000		4,114,000
Change in secondary business sales generated by ranching								4,471,000
Change in resource area total business sales								18,186,000
Change in resource area total employment								120
Change in resource area population								270
Change in assessed valuation, all ranches								77,000
Change in resource area property tax revenue								5,000

[1] Changes from Table 2-23.

TABLE 4-9 -- PROJECTED RANCH OPERATOR DATA AND CHANGES[1]

PROPOSED PLAN LONG-TERM

Ranch Class	Number of Ranches	Allotments			Gross Sales		Net Income	
		BLM AUMs	Private AUMs	Total AUMs	Per Ranch	All Ranches	Per Ranch	All Ranches
1	43	6,528	6,545	13,073	$34,909	1,171,000	$17,499	704,000
2	61	20,569	29,946	50,515	75,270	3,599,000	5,734	432,000
3	16	6,388	9,281	15,669	118,225	1,752,000	26,592	410,000
4	17	13,197	25,731	38,928	270,890	4,201,000	16,962	273,000
5	5	3,913	15,810	19,723	762,385	3,590,000	266,587	1,295,000
8	3	3,701	1,525	5,226	870,903	2,422,000	292,454	835,000
Total	145	54,296	88,838	143,134		16,735,000		3,949,000
Change in secondary business sales generated by ranching								2,272,000

TABLE 4-16 -- SUMMARY OF IMPACTS

Environ-mental Elements	Continuation of Present Management Alternative	Proposed Plan	Energy and Minerals Alternative	Economic Benefit Alternative	Renewable Resources Alternative	Recreation Alternative	Natural Environment Alternative
Air Quality	No change	No significant increases in pollutants	No significant increases in pollutants. Potential minor adverse, given maximum minerals develop-ment.	No significant increase in pollutants. Potential minor adverse, given maximum coal develop-ment.	No significant increases in pollutants. Potential minor adverse in short term, given maximum range and forestry prescribed burning.	No significant increases in pollutants	Potential minor decrease in pollutants (beneficial).
Minerals/ Geology	No change	Beneficial: Highest potential coal lands available for lease. Oil and gas and other minerals development maintained.	Beneficial: Oil and gas development maximized - High potential coal lands available for lease.	Potential major beneficial: All suitable coal lands available for lease. Oil and gas development maintained.	Minor beneficial: Existing coal leases and oil and gas fields and expansion areas maintained.	Minor beneficial: Existing coal leases, and oil and gas fields and expansion areas maintained. Recreation values do not largely coincide with mineral development areas.	Minor beneficial: Existing coal leases and oil and gas fields and expansion areas maintained. Natural values do not largely coincide with mineral development areas.
Soils/ Water Quality	Potential minor adverse to watershed cover and water quality.	Beneficial: Active manage-ment for improvement in water and soil.	No significant major degradation - Potential minor adverse, given maximum cumulative mineral development and increased forage allocation to livestock.	No significant degradation - Impacts mitigable.	Major beneficial: Maximum manage-ment for improving water and soil.	Potential major beneficial: Active manage-ment for improve-ments.	Potential major beneficial actions impacting water and soils limited-Active manage-ment for improve-ment.

TABLE 4-16 -- SUMMARY OF IMPACTS—Continued

Environmental Elements	Continuation of Present Management Alternative	Proposed Plan	Energy and Minerals Alternative	Economic Benefit Alternative	Renewable Resources Alternative	Recreation Alternative	Natural Environment Alternative
Vegetation	Potential adverse in long term due to forage allocation at existing levels (45,648 AUMs) and no increase in grazing management from present (no new AMPs or new range improvement projects) - **40,817** AUMs long-term for livestock.	Beneficial: Initial forage allocation adjustments (to 39,726 AUMs) and increases in grazing management (major reconstruction of existing projects, new range improvement project construction, and additional AMPs developed) - **54,296** AUMs long-term for livestock.	Potential adverse, with grazing management constrained by expanded opportunities for mineral development. Initial forage allocation increases (to 52,652 AUMs) and grazing management same as Continuation of Present Management (no new AMPs or range improvements) - **48,754** AUMs long-term for livestock.	Beneficial: Initial forage allocation adjustments (to 52,652 AUMs) and increase in grazing management but constrained by expanded opportunities for oil and gas production (major range improvement reconstruction, new projects and additional AMPs) - **48,754** AUMs long-term for livestock.	Major beneficial: Initial forage allocation adjustments (to 39,726 AUMs) and opportunities for increased grazing management (major reconstruction of existing projects, new project construction and additional AMPs) - **56,050** AUMs long-term for livestock.	Major Beneficial: Initial forage allocation adjustments to (31,305 AUMs) Optimum grazing management opportunities (Same as Renewable Resources Alternative) - **47,404** AUMs long-term for livestock.	Major beneficial (same as Recreation Alternative).
	(All alternatives: Forest and other vegetation - no significant impacts in quality, productivity or utilization)						
Wildlife/ Threatened and Endangered Species	No change	Beneficial: Habitat management and maintenance	Potential adverse, given maximum cumulative mineral development and increased forage allocation for livestock; reduction in big game populations below 1980 levels.	Potential adverse, given maximum coal development land disposals and increased forage allocation for livestock; reduction in big game populations below 1980 levels.	Beneficial: Maximum habitat management.	Beneficial: Maximum habitat management and increased forage allocation for wildlife, increase in big game populations above DOW's objective levels.	Beneficial (Same as Recreation Alternative).
Visual Resources	Minor adverse	Minor beneficial	Minor adverse	Minor adverse	Minor beneficial	Moderate beneficial	Beneficial: All Class II areas (sensitive and seldom-seen) maintained.

TABLE 4-16 -- SUMMARY OF IMPACTS—Continued

Environ-mental Elements	Continuation of Present Management Alternative	Proposed Plan	Energy and Minerals Alternative	Economic Benefit Alternative	Renewable Resources Alternative	Recreation Alternative	Natural Environment Alternative
(All alternatives, except Natural Environment: all "sensitive" Class II areas maintained)							
Recreation	No change	Beneficial: Existing opportunities maintained	No significant degradation: Significant opportunities do not largely coincide with mineral development areas.	No significant degradation: Existing opportunities maintained - Potential major adverse impacts to hunting, given maximum coal.	No significant degradation: Existing opportunities maintained.	Major beneficial: Optimum manage-ment for recreation opportuni-ties.	No significant degradation: Existing opportunities maintained, including floatboating on the upper Colorado River.
(All alternatives except Natural Environment: Potential adverse impact from major developments affecting recreational rafting on upper Colorado River)							
Wilderness	Extensive loss of wilderness characteris-tics.	Partial loss of wilderness characteris-tics.	Partial loss of wilderness characteris-tics.	Extensive loss of wilderness characteris-tics.	Partial loss of wilderness characteris-tics.	Partial loss of wilderness characteris-tics.	Beneficial: Trouble-some WSA suitable - Wilderness values protected.
Cultural Re-sources	No change	No significant degradation: Basic manage-ment minimized impact to cultural resources.	No significant degradation (same as Preferred Alternative): Highest potential for disturbance of unidentified subsurface sites.	Potential minor adverse due to increase in actions requiring mitigation rather than development of cultural remains.	No significant degradation (same as Preferred Alternative).	Beneficial (same as Preferred Alternative): Also manage-ment for public information and education.	Major beneficial: Maximum manage-ment for protection, preservation, public information and education, and scientific knowledge.
Economic	No change						
All alternatives: No significant adverse impacts from management prescriptions are foreseen, with the exception of the development of a new coal mine in Jackson County, which would cause moderately significant impacts to Walden. The greatest potential for new mine development would occur under the Economic Benefit Alternative							
Social	No Change						
All alternatives: No significant adverse impacts from management prescriptions are foreseen, with the exception of the development of a new coal mine in Jackson County and its attendant low to moderate impacts on the local community. The greatest potential for new mine development would occur under the Economic Benefit Alternative							
Overall Alterna-tive Analysis							
All alternatives: No significant, major adverse cumulative impacts to environmental elements due to management alternatives are foreseen. Analysis depicted in this summary takes into account effective and successful committed mitigation. All alternatives are implementable. Major, significant adverse impacts on social and economic resources could occur in Jackson County should a new coal mine be developed. Other major impacts could occur should maximum energy/economic development occur - these potential impacts are indicated under the Energy and Minerals and/or the Economic Benefit Alternatives. Major adverse impacts to white-water rafting could occur if flows on the upper Colorado River were significantly altered.							

NOTE: Refer to specific impact analysis narrative under each alternative for detailed discussion.

CHAPTER 5

CONSULTATION AND COORDINATION

CHAPTER 5
CONSULTATION AND COORDINATION

PUBLIC PARTICIPATION

Communication and consultation with all interested public land users and other concerned people have been important components in the Kremmling RMP/EIS process and will continue to be important in the decisionmaking and implementation processes. Public participation -- both formal and informal -- will continue through such means as comment periods, news releases, and informational meetings.

The planning issues and criteria were developed utilizing extensive input and review by the public. A Federal Register notice of intent was published in January 1980. This notice described the resource area, outlined the planning process, listed specialists to be included in the planning effort, gave dates for public hearings/meetings for issue identification, and provided the name and number of a contact person to answer questions.

A series of public meetings was held in February and March of 1980 to identify issues of concern. In addition, representatives of state and local governments, various user and interest groups, and other agencies were contacted in March 1980. This public input was combined with input from BLM staff specialists to identify and develop a set of planning issues. These issues were published in *Update*, a BLM planning newsletter, in April 1980 for final public review and comment.

Planning criteria were developed to set standards and guidelines for the planning to follow. A draft version of the planning criteria was distributed to the public in December 1980 in the newsletter *Update*. About 500 copies were sent to individuals, elected officials, interest groups, and other agencies. Public responses were used in developing the final set of planning criteria.

Yet another public review phase was initiated after formulation of the six alternatives. (A seventh alternative, the Preferred, was not formulated until the environmental impact analysis had been completed for the six original alternatives.) Once again, the newsletter *Update* was used to inform interested parties of the alternatives being considered. BLM also presented its alternatives to the Multiple Use Advisory Council for review and comment.

The draft RMP/EIS was made available for a 90-day comment period on February 25, 1983. Public hearings were held in April, 1983 in Hot Sulphur Springs, Walden, and Golden, Colorado. Copies of the comment letters and oral testimony are included in Part 2 of this document as well as the responses to those comments requiring a response.

CONSULTATION AND COORDINATION

From the outset of the planning process, BLM has consulted and coordinated with numerous agencies, organizations, and individuals while preparing this resource management plan. A partial listing follows:

Federal Agencies

Department of Agriculture

- Soil Conservation Service
- U.S. Forest Service

Department of Interior

- Fish and Wildlife Service
- Minerals Management Service
- National Park Service
- Office of Surface Mining
- U.S. Geological Survey

State Agencies

Colorado Board of Land Commissioners

Colorado Division of Planning, State Clearinghouse

Note: The State Clearinghouse coordinates responses on behalf of numerous state agencies, such as the Colorado Division of Wildlife, Colorado Department of Natural Resources, etc.

Local Agencies and Governments

Town of Fraser

Town of Granby

Town of Grand Lake

Town of Hot Sulphur Springs

Town of Kremmling

Town of Walden

Eagle County Commissioners

Grand County Commissioners

Grand County Planning Department

Northwest Colorado Council of Governments

Jackson County Commissioners

Jackson County Planning Department

Other Organizations

American Institute of Professional Geologists

Audubon Society

Colorado Cattlemen's Association

Colorado Historical Society

Colorado Mining Association

Colorado Open Space Council, Wilderness Workshop

Colorado River Water Conservancy District

Colorado Whitewater Association

Craig District Grazing Advisory Board

Craig District Multiple Use Advisory Council

Denver Water Board

Friends of the Earth

Independent Petroleum Association of Mountain States

Middle Park Stock Growers

Mile-High Jeep Club

National Association of Counties

National Institute of Socioeconomic Research

Nature Conservancy

North Park Stock Growers

Rocky Mountain Oil and Gas Association

Sierra Club

Trailridge Rock and Mineral Club

Western River Guides Association

Universities

Colorado State University

University of Colorado

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APPENDICES

APPENDIX 1

VEGETATION MANIPULATIONS

APPENDIX 1
VEGETATION MANIPULATIONS

Chemical Control. The use of herbicides to control undesirable vegetation would be used when the following conditions exist:

A. Expected benefits outweigh those of other control methods, or other methods would not be feasible.
B. Contamination of water supplies would not occur.
C. Treatment could provide a selective means of killing certain brush species that could not be efficiently controlled by other methods.
D. Vegetation cover needs to be maintained in order to protect the soil profile from erosion.
E. Understory vegetation consists of sensitive and desirable plant species that could be lost through other treatments, such as burning.

Prescribed Burning. The use of fire to control undesirable vegetation would be used when the following conditions exist:

A. Undesirable brush species occupy at least 35 percent of the canopy cover.
B. Erosion potential is minimal.
C. Understory vegetation consists of desirable forage plants that are resistant to fire.
D. Expected benefits would outweigh other control methods, or other methods would not be feasible.
E. Understory vegetation does not contain undesirable species that resprout vigorously after burning.
F. Desirable big game browse species are nonexistent or make up a very small portion of existing vegetation composition.

Mechanical Control. The use of mechanical forms of manipulation, such as brush beating, mowing, and plowing, would be used when the following conditions existed:

A. Topographic conditions are suitable (i.e., slopes are 20 percent or less and large rocks are absent).
B. Expected benefits would outweigh other control methods, or other methods would not be feasible.
C. Overstory development (stature and density) is low profiled and, therefore, more economically suited to mechanical removal.

Reseeding. Artificial seeding could be considered after implementing any of the above-mentioned vegetation manipulations if insufficient desirable forage plants remained or introduced species were needed to supplement early spring or late fall pasture. Such areas would receive proper seedbed preparation, followed by the drilling or broadcasting of selected seed.

APPENDIX 2

SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

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SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

This appendix displays which management level each allotment within the resource falls under, by alternative, according to the criteria discussed in Chapter 3 under Management Prescription Catagories. In addition, the appendix contains the proposed forage allocations for livestock and wildlife along with the potential livestock forage production for all allotments in a mangement levels 1 and 2.

A specific appendix displaying similiar type data has not been developed for the Present Management or Energy and Minerals Alternatives. Because categorization of allotments is not being proposed. For initial livestock allocation and present authorized use for these two alternatives refer to appropriate columns in Appendix 2.

APPENDIX 2

SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7001	718		193	490	35		CATTLE	5/16	10/31	100
7002	1,729		1,119	535	75		"	6/3	6/30	200
7003	3,089		1,453	1,143	493		"	5/17	7/31	336
7004	2,743		1,804	748	91		"	7/1	8/6	266
7005	218		197		21		"	8/7	8/8	32
7006	88		70	18			"	6/1	6/6	14
7007	12		9	3			"	6/6	6/25	1
7008	1,651					1,651	"	7/15	9/2	105
7009	171					171	"	9/3	9/30	60
7010	2,326		201	1,801	324		"	5/15	7/1	565
7011	120					120	"	5/15	7/1	30
7012	640					640	"	6/1	9/30	93
7013	632					632	"	6/3	7/18	74
7014	3,079			478	2,601		"	6/15	8/14	200
7015	15,408		12	4,501	10,895		"	6/16	6/30	200
7016	1,733		11	359	1,363		"	7/16	9/30	143
7017	2,442		1,545	829	68		"	7/16	9/30	240
7018	1,952		211	1,426	315		"	5/21	8/6	514
7019	804		469		335		"	5/16	9/30	176
7020	9,527		3,564	5,568	395		"	5/19	7/18	1,164
7021	654		80	574			"	6/1	7/31	116
7022	286			125	161		"	5/28	7/4	44
7023	4,122		21	3,918	183		"	6/3	6/28	423
7024	536		108	196	232		"	5/20	6/19	100
7025	856		16	738	102		"	5/20	6/19	67
7026	72			43	29		"	5/1	5/19	2
7027	36			36			"	5/6	9/30	5
7028	126			119	7		"	5/20	6/1	37
7029	160		160				"	6/1	6/30	17
7030	1,103		181	811	111		"	6/1	6/30	118
7031	3,129		14	2,709	406		"	5/16	10/5	262
7032	2,830		2,298	510	22		"	5/1	8/19	250

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ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7033	160					160	CATTLE	7/10	10/15	64
7034	153			153			"	6/24	10/10	25
7035	120					120	"	6/1	9/10	20
7036	120					120	"	6/10	10/15	38
7037	129		26	57	46		"	5/15	8/31	22
7038	846					846	"	5/5	10/15	312
7039	36			36			C & H	3/1	4/30	126
7040	278		20	132	126		CATTLE	6/1	6/30	18
7041	262		3	76	183		"	7/1	8/8	10
7042	80			48	32		"	7/11	9/10	27
7043	557			385	172		"	6/1	7/10	84
7044	3,519		2,803	416	300		"	5/17	7/17	565
7045	1,016		858		158		"	5/17	7/21	90
7046	441		373		68		"	6/1	6/15	70
7047	77		14	63			"	6/16	6/24	14
7048	191		72	75	44		"	7/18	8/17	90
7049	322		81	241			"	5/1	11/30	27
7050	552		71	325	156		"	5/16	11/30	59
7051	2,502		2,372		130		"	6/16	7/14	258
7052	317			315	2		"	7/5	8/4	16
7053	593		1	391	201		"	5/16	6/2	102
7054	1,009			891	118		"	5/15	6/30	150
7055	526			514	12		"	7/1	8/1	75
7056	177		173	4			"	6/1	6/12	23
7057	812		194	618			"	5/20	10/15	111
7058	1,014			831	183		"	5/1	6/25	159
7059	35			14	21		"	6/15	7/1	10
7060	878		577	138	163		"	6/1	7/31	93
7061	188		120	61	7		"	6/1	7/1	49
7062	102		68		43		"	5/16	6/30	18
7063	1,036		326	709	1		"	6/1	8/31	110
7064	918		758	13	147		"	6/1	8/31	91

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SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7065	2,429		2,141	288			CATTLE	6/1	8/31	231
7066	858					858	"	6/15	8/30	170
7067	874					874	"	6/15	8/30	174
7068	450		93	264	93		"	5/16	10/15	170
7069	80					80	"	6/5	10/1	29
7070	55					55	"	6/5	10/1	31
7071	334					334	"	6/5	10/1	224
7072	258		179	68	11		"	6/1	6/15	30
7073	1,424		887	428	109		"	6/1	6/30	229
7074	12		12				"	8/1	9/19	74
7075	46					46	"	7/1	8/30	4
7077	96		5	72	19		"	6/16	6/30	43
7078	520					520	"	7/1	8/15	27
7079	1,023			953	70		"	6/1	7/12	137
7080	6,073		538	5,424	111		"	5/25	7/8	816
7081	1,179			354	825		"	5/16	6/30	225
7082	949			369	580		"	5/16	6/30	107
7083	780					780	"	6/15	9/1	150
7084	2,174		1,945	94	135		"	5/20	6/30	237
7085	194		194				"	5/15	10/1	47
7086	159		43	116			"	5/16	7/31	50
7087	513		53	460			"	6/15	7/31	54
7088	137		7	127	3		"	6/20	8/19	12
7089	397					397	"	5/15	9/30	126
7090	400					400	"	6/16	7/16	49
7091	315					315	"	7/1	7/31	35
7092	1,237					1,237	"	8/1	8/21	149
7093	2,945		624	1,187	1,134		"	5/21	7/5	210
7094	48		35	7	6		"	6/1	9/30	80
7095	110					110	"	6/1	9/15	19
7096	6,816		4,442	2,041	333		"	5/10	10/9	795
7097	106			13	93		"	7/1	9/14	8

APPENDIX 2

SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7098	418		10	161	247		CATTLE	5/1	8/31	62
7099	50		50				"	6/1	9/30	24
7100	560			401	159		"	7/20	9/2	100
7101	127		127				"	9/28	10/27	37
7102	516			424	92		"	5/16	9/15	48
7103	1,239		259	979	1		"	5/16	7/8	190
7104	240		49	191			"	5/16	7/15	27
7105	1,450		863	524	63		"	5/16	7/15	194
7106	141		133	8			"	5/16	7/15	175
7107	1,612		194	1,262	156		"	6/6	10/20	472
7108	205		138	67			"	5/15	7/14	38
7109	431					431	"	7/1	8/31	88
7110	1,552		1,220	332			"	5/11	6/10	242
7111	1,036		330	577	129		"	5/16	11/30	455
7112	730					730	"	6/1	10/21	65
7113	120					120	HORSE	6/15	9/11	9
7114	520					520	"	5/21	10/10	12
7115	1,232					1,232	CATTLE	6/1	10/15	306
7116	2,319		1,688	15	616		"	5/21	7/20	268
7117	55		55				"	5/21	6/3	7
7118	191		158	33			"	6/1	6/30	39
7119	2,246		12	2,047	187		"	7/1	9/19	259
7120	1,914		400	1,465	49		"	6/16	7/31	200
7121	404		404				"	9/11	10/31	48
7122	40					40	"	5/1	9/30	6
7123	219					219	"	6/1	7/31	102
7124	370					370	"	9/1	10/5	134
7125	245		245				"	9/1	10/20	52
7126	104		75		29		"	6/1	7/31	9
7127	110					110	C & H	5/16	6/31	23
7128	330					330	CATTLE	6/1	10/7	51
7129	180					180	"	6/1	6/30	36

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SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7130	159					159	CATTLE	6/1	10/10	65
7131	741					741	"	5/16	9/15	180
7133	2,857		382	2,225	250		"	5/16	6/30	329
7134	475		159	316			"	5/16	6/30	53
7135	2,334		111	1,755	468		"	5/30	6/26	336
7136	1,381			1,381			"	6/1	11/30	232
7137	332			170	162		"	6/1	11/30	70
7138	236			233	3		"	6/27	7/15	20
7139	1,667		37	1,542	88		"	6/15	7/14	184
7140	520					520	"	7/1	7/31	125
7141	1,813		851	962			"	6/1	7/10	267
7142	1,117		696	254	167		"	7/15	8/14	186
7143	482			374	108		"	5/16	5/25	67
7144	274		102	51	121		"	7/11	8/31	74
7145	246			246			"	6/5	6/14	74
7146	160					160	"	7/7	9/30	36
7147	178		166		12		"	6/1	6/30	27
7148	195		13	80	102		"	6/15	9/20	27
7149	127		26	86	15		"	6/15	8/10	24
7150	1,011		111	617	283		"	6/16	9/3	175
7151	836		47	493	296		"	6/8	6/14	25
7152	466		27	82	357		"	5/16	11/30	312
7153	240					240	"	6/1	9/30	77
7154	80					80	"	6/1	9/30	35
7155	250		80	106	64		"	6/1	6/15	10
7156	422		231	79	112		"	5/20	10/15	31
7157	624		160	408	56		"	8/1	9/6	134
7158	104		25	37	42		"	5/7	10/15	64
7159	2,610					2,610	"	6/1	9/13	809
7160	349		261	88			"	9/15	11/14	113
7161	475		70	404	1		"	5/20	8/26	117

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SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7162	906			209	697		CATTLE	5/15	7/18	192
7163	749		509	203	37		"	6/1	7/28	83
7164	690			662	28		"	6/15	7/30	172
7165	39		28	11			"	5/16	7/15	3
7166	322		322				"	6/1	6/30	39
7167	1,240					1,240	"	6/1	6/30	78
7168	964		10	734	220		"	6/12	7/3	131
7169	1,361			400	961		"	5/20	6/11	114
7170	328			328			"	7/4	7/10	10
7171	279			3	276		"	10/1	11/11	45
7172	2,089		1,542	63	484		"	5/16	6/15	100
7173	420		263	71	86		"	6/15	9/15	37
7174	238		153		85		"	5/15	9/15	19
7175	2,312		2,101		211		"	6/5	7/30	150
7176	60					60	"	6/1	8/10	11
7177	93					93	"	6/1	7/31	6
7178	206					206	"	6/1	7/31	40
7179	453		453				"	5/16	6/30	48
7180	59		51	8			"	11/1	11/30	142
7181	108		3	105			"	6/1	6/15	45
7182	160					160	"	6/1	7/1	53
7183	625					625	"	7/16	9/30	113
7184	270					270	"	6/1	6/30	29
7185	240					240	"	7/1	10/31	80
7186	234		10	224			"	5/16	6/30	68
7187	1,506		745	746	15		"	5/1	10/31	75
7188	94		47		47		"	5/16	6/30	27
7189	1,589		338	545	706		"	6/1	7/31	160
7190	90			9	81		"	10/16	11/30	60
7191	1,720			503	1,217		"	5/21	9/30	242
7192	2,366		1,270	1,087	9		"	6/1	8/30	457
7193	317		33	280	4		"	8/20	10/18	101

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SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7194	120					120	CATTLE	5/1	6/30	50
7195	80					80	"	5/1	6/30	41
7196	120					120	"	6/15	9/11	66
7197	180					180	"	7/1	8/21	84
7198	60					60	"	6/1	6/20	97
7199	190			172	18		"	5/16	7/15	26
7250	4,563		398	786	3,379		"	6/1	8/30	803
7251	40					40	"	6/15	8/24	10
7252	1,726		86	553	1,087		"	6/1	8/19	185
7253	3,876			1,489	2,387		"	5/20	8/20	782
7254	4,859		29	368	4,462		"	6/1	9/30	364
7255	2,443		44	628	1,771		C & H	5/15	10/31	198
7256	3,357			1,214	2,143		"	5/25	10/10	297
7257	2,500			729	1,771		CATTLE	5/15	10/15	95
7258	2,602		214	468	1,920		"	5/15	10/15	209
7259	430				430		"	5/20	7/4	12
7260	887			42	845		"	5/15	7/14	227
7261	500					500	"	6/16	9/30	124
7500	3,314		815	2,337	162		"	5/20	9/15	351
7501	899		188	711			"	6/1	6/30	152
7502	828		96	696			"	6/1	11/30	177
7503	513		18	495			"	6/1	6/15	93
7504	1,237			1,156	81		"	6/16	10/15	340
7505	4,251		215	3,157	879		"	5/15	10/15	532
7506	7,722		23	7,447	252		"	5/20	6/20	362
7507	5,504		1,007	4,270	227		C & S	5/15	12/28	582
7508	355		58	289	8		CATTLE	6/1	8/15	59
7510	2,506		213	2,174	119		"	6/1	10/10	252
7511	4,914		493	4,527	54		"	6/1	9/25	238
7512	324		55	192	77		"	5/20	8/20	60
7513	68			68			"	7/1	9/30	3
7515	387			387			"	5/26	6/25	90

APPENDIX 2

SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7519	314					314	CATTLE	6/1	8/15	18
7520	148					148	"	5/16	11/30	48
7521	437					437	"	6/1	7/31	44
7522	5,240					5,240	"	6/1	9/30	225
7523	520					520	"	6/1	6/30	20
7524	1,289					1,289	"	6/1	10/31	120
7525	803					803	"	6/1	12/31	145
7526	120					120	"	6/1	10/31	30
7527	5,580		238	5,096	246		"	6/1	9/30	470
7528	80					80	"	6/1	9/15	12
7529	1,440					1,440	"	6/1	9/15	98
7530	789					789	"	6/1	9/15	105
7532	403					403	"	7/16	9/30	24
7533	839					839	"	5/21	6/30	225
7534	1,055		53	1,002			"	9/1	9/30	69
7535	1,750			1,483	267		"	6/1	10/31	171
7536	3,627					3,627	"	6/1	10/15	720
7537	5,726	111	3,217	2,299	99		"	5/10	7/9	307
7538	2,264					2,264	"	5/1	11/30	268
7539	589					589	"	7/1	10/31	97
7540	1,264		14	1,221	29		"	5/20	12/15	211
7541	2,977		19	2,882	76		"	6/1	9/30	486
7542	986		382	221	383		"	5/15	10/14	250
7544	88			56	32		"	6/1	9/30	7
7545	1,238					1,238	"	6/1	11/11	303
7546	873	38	233	534	68		"	5/16	11/30	75
7547	727	11	42	561	113		"	5/16	10/8	113
7550	1,370			1,140	230		"	8/6	9/11	63
7551	1,228			1,082	146		"	6/1	9/30	141
7552	1,057		32	832	193		"	5/16	9/30	149
7553	1,883			1,740	143		"	5/15	11/30	236
7555	2,997	165	1,197	1,539	96		"	5/15	6/14	245

APPENDIX 2

SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7556	3,536					3,536	CATTLE	5/15	10/30	295
7557	234		25	209			"	5/16	11/30	59
7558	2,426		155	1,266	405		C & H	3/1	2/28	611
7559	80					80	CATTLE	3/15	12/1	10
7560	2,077		95	1,737	245		"	2/1	11/30	420
7561	4,097		216	3,470	411		"	6/1	9/30	518
7562	1,048		212	836			"	5/16	12/15	241
7563	712		7	705			"	5/11	6/11	61
7564	654		271	383			"	5/16	11/1	87
7565	6,470		374	5,821	275		"	7/1	9/30	380
7566	47					47	"	5/15	11/20	88
7568	6,741		566	5,388	787		"	6/1	9/30	1,600
7569	1,381			1,175	206		"	5/16	6/30	113
7573	2,526					2,526	"	8/1	11/30	184
7574	2,095	298	467	924	406		"	5/13	6/30	179
7576	85					85	"	5/1	10/1	20
7577	959			959			"	6/1	10/15	120
7579	4,032		288	2,444			"	6/1	9/30	345
7580	1,298		338	633	327		"	5/16	6/30	210
7581	120					120	"	6/1	9/15	22
7582	200					200	"	6/1	9/15	44
7583	612		200	412			"	5/20	11/2	112
7584	330		115	193	22		"	3/1	12/10	16
7585	1,400	50	445	606	299		"	5/16	10/22	144
7586	48			48			"	5/16	7/15	12
7587	509			509			"	5/16	6/30	83
7588	3,982		91	3,518	373		"	8/1	10/15	350
7589	160					160	"	6/1	9/30	20
7750	481					481	"	7/1	7/31	49
7751	767		73	694			"	6/1	7/31	60
7752	40					40	"	6/15	8/14	4
7753	360					360	"	6/15	8/14	24

APPENDIX 2

SUMMARY OF CURRENT ALLOTMENT ECOLOGICAL CONDITION AND AUTHORIZED USE

ALLOTMENT NO.	ACRES PUBLIC LAND	CURRENT CONDITION CLASS RATING PUBLIC LANDS EXCELLENT	GOOD	FAIR	POOR	UNCLASSIFIED	KIND OF LIVESTOCK	SEASON OF USE FROM	TO	PRESENT AUTHORIZED USE AUM'S
7754	2,268		965	1,183			CATTLE	6/1	10/1	414
7755	600					600	"	6/1	9/30	120
7757	265					265	"	6/16	2/28	40
7758	550		22	298	230		"	6/1	10/15	113
7760	676		57	619			"	5/15	11/14	70
7762	1,368		9	707			"	6/1	8/31	149
7763	440					440	"	5/19	7/18	57
7764	342			342			"	5/15	7/15	51
7765	1,075			995		80	"	5/15	7/15	118
7766	1,477			1,440	37		"	6/1	6/30	182
7767	372		18	257	97		"	5/15	10/14	64
7769	105					105	"	6/1	7/31	14
7770	760					760	"	6/15	8/14	84
7775	1,040					1,040	"	5/15	9/5	173
7776	80					80	"	6/15	7/14	7
7777	280					280	"	5/20	10/1	24
7778	820			820			"	5/15	6/30	135
7780	40					40	"	5/15	6/14	6
7781	223					223	"	5/15	7/14	38
7782	78					78	"	6/1	6/3	6
7783	760					760	"	6/1	10/31	102
7784	996					996	"	6/1	6/30	108
7785	120					120	"	6/1	6/30	20

C = Cattle H = Horse S = Sheep

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION
AND
FORAGE ALLOCATION

APPENDIX 3
INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION

This appendix displays, by alternative, the short term livestock AUMs (initial allocation), the long term livestock AUMs (long term allocation), and the percent change each represents from the present authorized livestock use. It also shows the proposed forage allocation for wildlife by alternative.

The forage allocations displayed were determined by using soils and vegetation data collected in 1980, utilization data collected during 1982 and comparisons made with the U.S. Soil Conservation Service Colorado Stocking Guides. The allocations are estimated and serve only to approximate changes in AUM's for the purpose of impact analysis. Additional monitoring studies will be conducted in order to support or refine the proposed allocations before final allocation decisions are made.

In addition to forage allocations, the appendix also shows which management level each allotment falls under according to the criteria discussed in Chapter 3 under Management Prescription Categories. It should be noted that several allotments shift from Management Level 1 or 2 to Management Level 3 in the Economic Benefit Alternative and the Proposed Plan. This shift in levels is due to the priority emphasis of coal leasing in these allotments.

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	USE (AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7001	100	100	0	75	5	1	---	---	75	-25	75	5	1	---	3
7002	200	200	"	136	---	---	8	---	186	-7	261	---	---	8	2
7003	336	336	"	431	89	52	---	---	476	+42	602	89	52	---	2
7004	266	266	"	324	53	30	14	---	383	+44	544	53	30	14	2
7005	32	32	"	26	---	---	---	---	26	-19	26	---	---	---	3
7006	14	14	"	9	---	---	---	---	9	-36	9	---	---	---	3
7007	1	1	"	1	---	---	---	---	1	0	1	---	---	---	3
7008	105	105	"	89	---	---	---	---	105	0	105	---	---	---	2
7009	60	60	"	51	---	---	---	---	60	0	60	---	---	---	2
7010	565	565	"	162	---	10	---	---	157	-72	157	---	32	---	3
7011	30	30	"	30	---	---	---	---	30	0	30	---	---	---	3
7012	93	93	"	93	---	---	---	---	93	0	93	---	---	---	3
7013	74	74	"	74	---	---	---	---	74	0	74	---	---	---	3
7014	200	200	"	240	245	79	32	---	114	-43	288	245	79	32	2
7015	200	200	"	1,765	848	514	67	---	1,140	+470	1,351	848	1,591	67	1
7016	143	143	"	83	138	105	---	---	61	-57	217	138	105	---	2
7017	240	240	"	405	218	183	---	---	283	+18	359	218	183	---	1
7018	514	514	"	56	109	---	25	---	119	-77	308	109	---	25	2
7019	176	176	"	141	---	1	1	---	135	-23	141	---	2	1	1
7020	1,164	1,164	"	771	50	---	18	---	898	-23	1,430	50	---	18	2
7021	116	116	"	83	12	12	---	---	66	-43	66	15	81	---	3
7022	44	44	"	23	---	---	---	---	23	-48	23	---	---	---	3
7023	423	423	"	264	---	17	---	---	256	-39	256	---	54	---	3
7024	100	100	"	44	---	7	---	---	40	-60	40	---	22	---	3
7025	67	67	"	55	---	4	---	---	53	-21	53	---	12	---	3
7026	2	2	"	5	---	---	---	---	5	+150	5	---	---	---	3
7027	5	5	"	8	---	1	---	---	8	+60	8	---	2	---	3
7028	37	37	"	12	---	1	---	---	12	-66	12	---	---	---	3
7029	17	17	"	17	---	---	---	---	17	0	17	---	---	---	3
7030	118	118	"	122	71	---	---	---	97	-18	97	71	---	---	3
7031	262	262	"	212	---	118	34	---	189	-28	189	---	118	34	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7032	250	250	0	161	60	29	1	---	218	-13	526	60	29	1	2
7033	64	64	"	64	---	---	---	---	64	0	64	---	---	---	3
7034	25	25	"	18	21	---	---	---	11	-56	11	21	---	---	3
7035	20	20	"	20	---	---	---	---	20	0	20	---	---	---	3
7036	38	38	"	38	---	---	---	---	38	0	38	---	---	---	3
7037	22	22	"	9	---	---	---	---	9	-59	9	---	---	---	3
7038	312	312	"	312	---	---	---	---	312	0	312	---	---	---	3
7039	126	126	"	126	---	---	---	---	126	0	126	---	---	---	3
7040	18	18	"	26	15	4	---	---	19	+6	19	19	7	---	3
7041	10	10	"	31	29	3	---	---	19	+90	19	29	17	---	3
7042	27	27	"	20	15	---	---	---	14	-48	14	15	---	---	3
7043	84	84	"	39	---	---	---	---	39	-53	39	---	---	---	3
7044	565	565	"	492	---	20	31	---	456	-19	509	---	56	31	1
7045	90	90	"	147	---	5	1	---	138	+53	166	---	15	1	1
7046	70	70	"	25	4	---	3	---	38	-46	91	4	---	3	2
7047	14	14	"	9	---	---	---	---	9	-36	9	---	---	---	3
7048	90	90	"	90	---	---	---	---	90	0	90	---	---	---	3
7049	27	27	"	33	13	11	---	---	25	-7	25	13	23	---	3
7050	59	59	"	56	23	5	---	---	46	-22	46	23	5	---	3
7051	258	258	"	364	---	22	45	---	337	+31	363	---	22	45	1
7052	16	16	"	27	7	6	11	---	21	+31	21	7	6	11	3
7053	102	102	"	45	---	1	3	---	44	-57	44	---	1	3	3
7054	150	150	"	48	---	12	3	---	67	-55	158	---	12	3	2
7055	75	75	"	38	---	4	---	---	36	-52	36	---	15	---	3
7056	23	23	"	25	7	1	---	---	20	-13	20	10	4	---	3
7057	111	111	"	71	28	7	---	---	60	-46	60	28	7	---	3
7058	159	159	"	58	---	13	34	---	48	-70	48	---	34	34	3
7059	10	10	"	6	9	3	---	---	3	-70	3	9	3	---	3
7060	93	93	"	81	---	7	3	---	77	-17	77	---	21	3	3
7061	49	49	"	49	---	---	---	---	49	0	49	---	---	---	3
7062	18	18	"	21	7	---	4	---	17	-6	17	7	---	4	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	USE (AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7063	110	110	0	159	16	---	9	---	152	+38	152	16	---	9	3
7064	91	91	"	119	---	---	4	---	113	+24	137	---	---	4	1
7065	231	231	"	371	50	---	23	---	335	+45	356	50	---	23	1
7066	170	170	"	170	---	---	---	---	170	0	170	---	---	---	3
7067	174	174	"	174	---	---	---	---	174	0	174	---	---	---	3
7068	170	170	"	86	---	---	---	---	86	-49	86	---	---	---	3
7069	29	29	"	29	---	---	---	---	29	0	29	---	---	---	3
7070	31	31	"	31	---	---	---	---	31	0	31	---	---	---	3
7071	224	224	"	224	---	---	---	---	224	0	224	---	---	---	3
7072	30	30	"	37	---	1	---	---	37	+23	37	---	5	---	3
7073	229	229	"	205	---	10	18	---	188	-18	207	---	30	18	1
7074	74	74	"	74	---	---	---	---	74	0	74	---	---	---	3
7075	4	4	"	1	---	---	---	---	1	-75	1	---	---	---	3
7077	43	43	"	25	1	---	1	---	25	-42	25	1	---	---	3
7078	27	27	"	27	---	---	---	---	27	0	27	---	---	---	3
7079	137	137	"	98	---	4	---	---	96	-30	96	---	12	---	3
7080	816	816	"	402	---	30	39	---	382	-53	382	---	93	39	3
7081	225	225	"	78	4	1	20	---	109	-52	283	4	3	20	2
7082	107	107	"	50	20	---	9	---	66	-38	168	20	---	9	2
7083	150	150	"	150	---	---	---	---	150	0	150	---	---	---	3
7084	237	237	"	153	---	8	8	---	220	-7	414	---	27	8	2
7085	47	47	"	44	---	---	---	---	44	-6	44	---	---	---	3
7086	50	50	"	25	---	---	---	---	25	-50	25	---	---	---	3
7087	54	54	"	20	---	---	---	---	30	-44	77	---	---	---	2
7088	12	12	"	7	---	---	---	---	7	-42	7	---	---	---	3
7089	126	126	"	126	---	---	---	---	126	0	126	---	---	---	3
7090	49	49	"	49	---	---	---	---	49	0	49	---	---	---	3
7091	35	35	"	35	---	---	---	---	35	0	35	---	---	---	3
7092	149	149	"	149	---	---	---	---	149	0	149	---	---	---	3
7093	210	210	"	262	---	---	2	---	310	+48	623	---	---	2	2
7094	80	80		19	---	---	---	---	19	-76	19	---	---	---	3

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		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7095	19	19	0	19	---	---	---	---	19	0	19	---	---	---	3
7096	795	795	"	472	145	---	69	---	652	-18	1,207	145	---	69	2
7097	8	8	"	6	---	---	1	---	6	-25	6	---	---	1	3
7098	62	62	"	41	---	---	---	---	41	-34	41	---	---	---	3
7099	24	24	"	16	---	---	---	---	16	-33	16	---	---	---	3
7100	100	100	"	24	---	---	1	---	36	-64	99	---	---	---	2
7101	37	37	"	18	---	---	3	---	17	-54	17	---	---	3	3
7102	48	48	"	36	---	2	---	---	35	-27	35	---	7	---	3
7103	190	190	"	99	---	---	---	---	149	-22	254	---	---	---	2
7104	27	27	"	36	---	1	---	---	36	+33	36	---	2	---	3
7105	194	194	"	95	---	---	---	---	143	-26	234	---	---	---	2
7106	175	175	"	61	---	---	---	---	61	-65	61	---	---	---	3
7107	472	472	"	129	102	20	---	---	156	-67	409	102	20	---	2
7108	38	38	"	25	---	---	3	---	25	-34	25	---	---	3	3
7109	88	88	"	88	---	---	---	---	88	0	88	---	---	---	3
7110	242	242	"	97	---	---	---	---	147	-39	242	---	---	---	2
7111	455	455	"	455	---	---	---	---	455	0	455	---	---	---	3
7112	65	65	"	65	---	---	---	---	65	0	65	---	---	---	3
7113	9	9	"	9	---	---	---	---	9	0	9	---	---	---	3
7114	12	12	"	12	---	---	---	---	12	0	12	---	---	---	3
7115	306	306	"	306	---	---	---	---	306	0	306	---	---	---	3
7116	268	268	"	340	---	11	23	---	315	+18	338	---	34	23	1
7117	7	7	"	8	---	1	---	---	7	0	7	---	3	---	3
7118	39	39	"	18	---	---	---	---	18	-54	18	---	---	---	3
7119	259	259	"	117	---	43	29	---	170	-34	440	---	18	9	2
7120	200	200	"	61	129	40	19	---	60	-70	255	129	90	19	2
7121	48	48	"	43	---	1	6	---	41	-15	41	---	4	6	3
7122	6	6	"	6	---	---	---	---	6	0	6	---	---	---	3
7123	102	102	"	102	---	---	---	---	102	0	102	---	---	---	3
7124	134	134	"	134	---	---	---	---	134	0	134	---	---	---	3
7125	52	52	"	30	---	1	---	---	30	-42	30	---	---	---	3

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		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7126	9	9	0	15	---	---	---	---	15	+40	15	---	---	---	3
7127	23	23	"	23	---	---	---	---	23	0	23	---	---	---	3
7128	51	51	"	51	---	---	---	---	51	0	51	---	---	---	3
7129	36	36	"	36	---	---	---	---	36	0	36	---	---	---	3
7130	65	65	"	65	---	---	---	---	65	0	65	---	---	---	3
7131	180	180	"	180	---	---	---	---	180	0	180	---	---	---	3
7133	329	329	"	293	108	95	---	---	293	-11	673	108	95	---	2
7134	53	53	"	55	9	9	---	---	51	-4	51	9	9	---	3
7135	336	336	"	161	28	2	---	---	150	-55	150	28	8	---	3
7136	232	232	"	66	---	8	---	---	96	-58	278	---	25	---	2
7137	70	70	"	30	---	---	---	---	30	-57	30	---	---	---	3
7138	20	20	"	21	---	3	---	---	20	0	20	---	8	---	3
7139	184	184	"	142	44	27	7	---	144	-21	410	44	27	7	2
7140	125	125	"	125	---	---	---	---	125	0	125	---	---	---	3
7141	267	267	"	136	63	36	1	---	177	-33	364	63	36	1	2
7142	186	186	"	94	38	24	5	---	123	-33	188	38	24	5	2
7143	67	67	"	16	---	---	---	---	25	-62	90	---	---	---	2
7144	74	74	"	16	---	---	---	---	24	-67	49	---	---	---	2
7145	74	74	"	12	---	---	---	---	12	-83	12	---	---	---	3
7146	36	36	"	36	---	---	---	---	36	0	36	---	---	---	3
7147	27	27	"	18	4	2	1	---	18	-33	18	4	8	1	3
7148	27	27	"	23	---	---	---	---	23	-14	23	---	---	---	3
7149	24	24	"	21	---	---	---	---	21	-13	21	---	---	---	3
7150	175	175	"	102	---	---	---	---	102	-41	102	---	---	---	3
7151	25	25	"	69	---	---	---	---	81	+224	138	---	---	---	2
7152	312	312	"	109	---	---	---	---	109	-65	109	---	---	---	3
7153	77	77	"	77	---	---	---	---	77	0	77	---	---	---	3
7154	35	35	"	35	---	---	---	---	35	0	35	---	---	---	3
7155	10	10	"	20	---	---	---	---	24	+140	42	---	---	---	2
7156	31	31	"	44	---	---	---	---	44	+41	44	---	---	---	3
7157	134	134	"	72	9	34	---	---	53	-60	53	9	104	---	3

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		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	USE (AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7158	64	64	0	13	---	3	---	---	11	-82	11	---	10	---	3
7159	809	809	"	809	---	---	---	---	809	0	809	---	---	---	3
7160	113	113	"	33	---	9	---	---	30	-73	30	---	16	---	3
7161	117	117	"	133	---	---	---	---	133	+14	133	---	---	---	3
7162	192	192	"	53	---	24	---	---	43	-78	43	---	75	---	3
7163	83	83	"	80	28	2	---	---	70	-16	70	28	2	---	3
7164	172	172	"	58	---	---	---	---	84	-49	120	---	---	---	2
7165	3	3	"	3	---	---	---	---	3	0	3	---	---	---	3
7166	39	39	"	28	---	---	---	---	28	-28	28	---	---	---	3
7167	78	78	"	78	---	---	---	---	78	0	78	---	---	---	3
7168	131	131	"	69	---	1	---	---	69	-47	69	---	3	---	3
7169	114	114	"	87	---	2	---	---	87	-24	87	---	5	---	3
7170	10	10	"	20	---	---	---	---	20	+100	20	---	---	---	3
7171	45	45	"	19	---	2	---	---	19	-58	19	---	4	---	3
7172	100	100	"	315	---	12	22	---	291	+191	308	---	40	22	1
7173	37	37	"	42	---	---	---	---	42	+14	42	---	---	---	3
7174	19	19	"	26	---	---	---	---	26	+37	26	---	---	---	3
7175	150	150	"	336	---	---	31	---	315	+110	337	---	---	31	1
7176	11	11	"	11	---	---	---	---	11	0	11	---	---	---	3
7177	6	6	"	6	---	---	---	---	6	0	6	---	---	---	3
7178	40	40	"	40	---	---	---	---	40	0	40	---	---	---	3
7179	48	48	"	40	11	7	---	---	33	-31	33	11	23	---	3
7180	142	142	"	142	---	---	---	---	142	0	142	---	---	---	3
7181	45	45	"	45	---	---	---	---	45	0	45	---	---	---	3
7182	53	53	"	53	---	---	---	---	53	0	53	---	---	---	3
7183	113	113	"	113	---	---	---	---	113	0	113	---	---	---	3
7184	29	29	"	29	---	---	---	---	29	0	29	---	---	---	3
7185	80	80	"	80	---	---	---	---	80	0	80	---	---	---	3
7186	68	68	"	68	---	---	---	---	68	0	68	---	---	---	3
7187	75	75	"	127	---	---	16	---	150	+100	217	---	---	16	2
7188	27	27	"	18	---	---	2	---	18	-33	18	---	---	2	3

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
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		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7189	160	160	0	67	---	64	---	---	92	-43	198	---	64	---	2
7190	60	60	"	66	---	12	---	---	60	0	60	---	36	---	3
7191	242	242	"	67	98	69	21	---	55	-77	364	98	69	21	2
7192	457	457	"	162	---	---	---	---	245	-46	344	---	---	---	2
7193	101	101	"	63	---	---	---	---	63	-38	63	---	---	---	3
7194	50	50	"	50	---	---	---	---	50	0	50	---	---	---	3
7195	41	41	"	41	---	---	---	---	41	0	41	---	---	---	3
7196	66	66	"	66	---	---	---	---	66	0	66	---	---	---	3
7197	84	84	"	84	---	---	---	---	84	0	84	---	---	---	3
7198	97	97	"	97	---	---	---	---	97	0	97	---	---	---	3
7199	26	26	"	19	---	---	---	---	19	-27	19	---	---	---	3
7250	803	803	"	257	47	34	---	---	362	-55	716	55	46	---	2
7251	10	10	"	10	---	---	---	---	10	0	10	---	---	---	3
7252	185	185	"	69	71	5	---	---	79	-57	257	71	5	---	2
7253	782	782	"	196	167	8	---	---	220	-72	786	217	7	---	2
7254	364	364	"	212	121	95	---	---	255	-30	455	135	128	---	2
7255	198	198	"	222	37	30	---	---	164	-17	297	39	39	---	2
7256	297	297	"	184	149	49	---	---	219	-26	670	149	48	---	2
7257	95	95	"	145	---	---	---	---	145	+53	145	---	---	---	3
7258	209	209	"	163	43	33	---	---	156	-25	280	46	36	---	2
7259	12	12	"	25	30	1	---	---	12	0	12	35	2	---	3
7260	227	227	"	80	82	4	---	---	46	-80	46	91	5	---	3
7261	124	124	"	124	---	---	---	---	124	0	124	---	---	---	3
7500	351	351	"	642	638	441	---	---	433	+61	991	638	441	---	2
7501	152	152	"	230	144	84	---	---	156	+3	208	144	84	---	1
7502	177	177	"	139	30	---	---	---	128	-28	128	30	---	---	3
7503	93	93	"	53	35	11	---	---	66	-29	168	35	11	---	2
7504	340	340	"	116	---	---	---	---	116	-66	116	---	---	---	3
7505	532	532	"	722	386	419	---	---	656	+23	847	386	419	---	2
7506	362	362	"	1,140	839	210	---	---	1,023	+183	1,423	839	210	---	2
7507	582	582	"	1.040	2,796	1,026	---	---	652	+12	1,152	2,796	1,861	---	2

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7508	59	59	0	74	35	---	---	---	61	+3	61	35	---	---	3
7510	252	252	"	286	134	129	---	---	273	+8	512	134	129	---	2
7511	238	238	"	788	1,279	789	---	---	224	-6	569	1,279	1,731	---	2
7512	60	60	"	48	3	3	---	---	46	-23	46	3	3	---	3
7513	3	3	"	5	---	10	---	---	3	0	3	---	17	---	3
7515	90	90	"	51	---	3	---	---	50	-44	50	---	6	---	3
7519	18	18	"	18	---	---	---	---	18	0	18	---	---	---	3
7520	48	48	"	48	---	---	---	---	48	0	48	---	---	---	3
7521	44	44	"	44	---	---	---	---	44	0	44	---	---	---	3
7522	225	225	"	225	---	---	---	---	225	0	225	---	---	---	3
7523	20	20	"	17	---	---	---	---	20	0	20	---	---	---	2
7524	120	120	"	120	---	---	---	---	120	0	120	---	---	---	3
7525	145	145	"	145	---	---	---	---	145	0	145	---	---	---	3
7526	30	30	"	30	---	---	---	---	30	0	30	---	---	---	3
7527	470	470	"	564	269	141	---	---	553	+18	914	269	141	---	2
7528	12	12	"	12	---	---	---	---	12	0	12	---	---	---	3
7529	98	98	"	98	---	---	---	---	98	0	98	---	---	---	3
7530	105	105	"	105	---	---	---	---	105	0	105	---	---	---	3
7532	24	24	"	24	---	---	---	---	24	0	24	---	---	---	3
7533	225	225	"	225	---	---	---	---	225	0	225	---	---	---	3
7534	69	69	"	118	51	28	---	---	86	+25	115	51	55	---	1
7535	171	171	"	170	48	155	---	---	137	-20	137	48	236	---	3
7536	720	720	"	720	---	---	---	---	720	0	720	---	---	---	3
7537	307	307	"	541	182	419	---	---	514	+67	919	182	419	---	2
7538	268	268	"	268	---	---	---	---	268	0	268	---	---	---	3
7539	97	97	"	97	---	---	---	---	97	0	97	---	---	---	3
7540	211	211	"	130	107	55	---	---	145	-31	268	107	97	---	2
7541	486	486	"	634	79	3	---	---	576	+19	627	79	3	---	1
7542	250	250	"	112	---	22	---	---	170	-32	321	---	22	---	2
7544	7	7	"	7	---	1	---	---	7	0	7	---	1	---	3
7545	303	303	"	256	---	---	---	---	303	0	303	---	---	---	2

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7546	75	75	0	105	55	56	---	---	76	+1	76	55	60	---	3
7547	113	113	"	108	19	18	---	---	97	-14	97	19	28	---	3
7550	63	63	"	210	89	45	---	---	157	+149	202	89	80	---	1
7551	141	141	"	58	---	---	---	---	87	-38	179	---	---	---	2
7552	149	149	"	98	76	32	---	---	123	-17	277	54	19	---	2
7553	236	236	"	283	3	64	---	---	256	+8	341	3	91	---	1
7555	245	245	"	166	309	171	---	---	111	-55	437	309	171	---	2
7556	295	295	"	295	---	---	---	---	295	0	295	---	---	---	3
7557	59	59	"	50	23	9	---	---	40	-32	40	23	11	---	3
7558	611	611	"	645	23	202	---	---	597	-2	597	23	202	---	3
7559	10	10	"	10	---	---	---	---	10	0	10	---	---	---	3
7560	420	420	"	261	157	57	---	---	331	-21	411	157	57	---	2
7561	518	518	"	532	---	190	---	---	503	-3	503	---	190	---	3
7562	241	241	"	286	41	32	---	---	253	+5	294	41	32	---	1
7563	61	61	"	64	---	10	---	---	59	-3	59	---	24	---	3
7564	87	87	"	118	16	95	---	---	98	+13	98	16	95	---	3
7565	380	380	"	372	---	269	---	---	366	-4	606	---	472	---	2
7566	88	88	"	88	---	---	---	---	88	0	88	---	---	---	3
7568	1,600	1,600	"	743	295	185	---	---	991	-38	1,280	295	185	---	2
7569	113	113	"	134	75	40	---	---	122	+8	377	75	69	---	2
7573	184	184	"	184	---	---	---	---	184	0	184	---	---	---	3
7574	179	179	"	218	73	194	---	---	203	+13	383	73	194	---	2
7576	20	20	"	20	---	---	---	---	20	0	20	---	---	---	3
7577	120	120	"	106	---	---	---	---	106	-12	106	---	---	---	3
7579	345	345	"	440	171	284	---	---	417	+21	444	171	284	---	2
7580	210	210	"	219	51	75	---	---	217	+3	252	51	162	---	2
7581	22	22	"	22	---	---	---	---	22	0	22	---	---	---	3
7582	44	44	"	44	---	---	---	---	44	0	44	---	---	---	3
7583	112	112	"	100	41	---	---	---	85	-24	85	41	---	---	3
7584	16	16	"	55	40	19	---	---	32	+100	32	40	32	---	3
7585	144	144	"	165	---	---	---	---	157	+9	209	---	---	---	1

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7586	12	12	0	16	7	3	---	---	12	0	12	7	4	---	3
7587	83	83	"	97	48	9	---	---	78	-6	78	48	9	---	3
7588	350	350	"	220	---	2	---	---	332	-5	332	---	3	---	2
7589	20	20	"	17	---	---	---	---	20	0	40	---	---	---	2
7750	49	49	"	49	---	---	---	---	49	0	49	---	---	---	3
7751	60	60	"	73	19	4	---	---	65	+8	65	19	7	---	3
7752	4	4	"	4	---	---	---	---	4	0	4	---	---	---	3
7753	24	24	"	24	---	---	---	---	24	0	24	---	---	---	3
7754	414	414	"	290	107	39	---	---	373	-10	522	107	39	---	2
7755	120	120	"	120	---	---	---	---	120	0	120	---	---	---	3
7757	40	40	"	40	---	---	---	---	40	0	40	---	---	---	3
7758	113	113	"	102	---	11	---	---	99	-12	99	---	18	---	3
7760	70	70	"	101	50	16	---	---	78	+11	78	50	26	---	3
7762	149	149	"	157	39	2	---	---	142	-5	142	39	2	---	3
7763	57	57	"	57	---	---	---	---	57	0	57	---	---	---	3
7764	51	51	"	50	13	14	---	---	40	-22	40	13	26	---	3
7765	118	118	"	114	102	69	---	---	101	-14	236	95	101	---	2
7766	182	182	"	116	64	26	---	---	149	-18	349	64	26	---	2
7767	64	64	"	42	---	7	---	---	63	-2	102	---	13	---	2
7769	14	14	"	15	---	---	---	---	14	0	14	---	---	---	1
7770	84	84	"	84	---	---	---	---	84	0	84	---	---	---	3
7775	173	173	"	173	---	---	---	---	173	0	173	---	---	---	3
7776	7	7	"	7	---	---	---	---	7	0	7	---	---	---	3
7777	24	24	"	24	---	---	---	---	24	0	24	---	---	---	3
7778	135	135	"	130	7	1	---	---	127	-6	127	7	1	---	3
7780	6	6	"	6	---	---	---	---	6	0	6	---	---	---	3
7781	38	38	"	38	---	---	---	---	38	0	38	---	---	---	3
7782	6	6	"	6	---	---	---	---	6	0	6	---	---	---	3
7783	102	102	"	90	---	---	---	---	102	0	102	---	---	---	2
7784	108	108	"	108	---	---	---	---	108	0	108	---	---	---	3
7785	20	20	"	20	---	---	---	---	20	0	20	---	---	---	3

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	(AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
TOTAL LIVE-STOCK AUM's	45,648														
INIT.		45,648							39,726						
LONG-TERM				40,817							54,296				
% CHANGE FROM CRNT. AUTHORIZED USE - INIT.			0							-13					
% CHANGE FROM CRNT. AUTHORIZED USE - LONG TERM				-11							+19				
TOTAL WILD-LIFE AUM's					12,798	8,417	734					12,870	12,615	706	

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)							PROPOSED PLAN						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
TOTAL CATE-GORY 1 ALLOTS								---							20
TOTAL CATE-GORY 2 ALLOTS								---							76
TOTAL CATE-GORY 3 ALLOTS								---							215

INIT. = INITIAL

CRNT. = CURRENT

ALLOTS = ALLOTMENTS

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7001		80	-20	80	1	---	---	---	80	-20	80	1	---	---	3
		188	-6	158	---	---	6	---	188	-6	263	---	---	6	2
		554	+65	465	27	36	---	---	554	+65	680	27	36	---	2
		433	+62	364	16	21	10	---	433	+62	594	16	21	10	2
		26	-19	26	---	---	---	---	26	-19	26	---	---	---	3
		9	-36	9	---	---	---	---	9	-36	9	---	---	---	3
		1	0	1	---	---	---	---	1	0	1	---	---	---	3
		105	0	88	---	---	---	---	105	0	105	---	---	---	2
		60	0	50	---	---	---	---	60	0	60	---	---	---	2
		167	-70	167	---	22	---	---	167	-70	167	---	22	---	3
		30	0	30	---	---	---	---	30	0	30	---	---	---	3
		93	0	93	---	---	---	---	93	0	93	---	---	---	3
		74	0	74	---	---	---	---	74	0	74	---	---	---	3
		320	+60	269	73	55	22	---	320	+60	494	73	55	22	2
		2,231	+1,015	2,342	254	1,114	47	---	2,231	+1,015	2,442	254	1,114	47	1
		190	+25	160	41	73	---	---	190	+25	346	41	73	---	2
		491	+104	516	65	128	---	---	491	+104	567	65	128	---	1
		195	-62	164	33	---	17	---	195	-62	384	33	---	17	2
		137	-22	137	---	1	---	---	137	-22	137	---	1	---	3
		938	-19	788	15	---	13	---	938	-19	1,470	15	---	13	2
		136	+17	136	4	57	---	---	136	+17	136	4	57	---	3
		23	-48	23	---	---	---	---	23	-48	23	---	---	---	3
		272	-35	272	---	38	---	---	272	-35	272	---	38	---	3
		47	-53	47	---	15	---	---	47	-53	47	---	15	---	3
		57	-15	57	---	8	---	---	57	-15	57	---	8	---	3
		5	+150	5	---	---	---	---	5	+150	5	---	---	---	3
		9	+80	9	---	1	---	---	9	+80	9	---	1	---	3
		12	-66	12	---	---	---	---	12	-66	12	---	---	---	3
		17	0	17	---	---	---	---	17	0	17	---	---	---	3
		147	+24	147	21	---	---	---	147	+24	147	21	---	---	3
7031		234	-10	234	---	83	24	---	234	-10	234	---	83	24	3

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7032		270	+8	227	18	20	---	---	270	+8	578	18	20	---	2
		64	0	64	---	---	---	---	64	0	64	---	---	---	3
		26	+4	26	6	---	---	---	26	+4	26	6	---	---	3
		20	0	20	---	---	---	---	20	0	20	---	---	---	3
		38	0	38	---	---	---	---	38	0	38	---	---	---	3
		9	-59	9	---	---	---	---	9	-59	9	---	---	---	3
		312	0	312	---	---	---	---	312	0	312	---	---	---	3
		126	0	126	---	---	---	---	126	0	126	---	---	---	3
		34	+89	34	6	5	---	---	34	+89	34	6	5	---	3
		44	+340	44	9	12	---	---	44	+340	44	9	12	---	3
		25	-7	25	4	---	---	---	25	-7	25	4	---	---	3
		39	-53	39	---	---	---	---	39	-53	39	---	---	---	3
		482	-15	506	---	39	22	---	482	-15	535	---	39	22	3
		144	+60	151	---	10	---	---	144	+60	172	---	10	---	1
		42	-40	35	1	---	2	---	42	-40	95	1	---	2	3
		9	-36	9	---	---	---	---	9	-36	9	---	---	---	3
		90	0	90	---	---	---	---	90	0	90	---	---	---	3
		41	+52	41	4	16	---	---	41	+52	41	4	16	---	3
		64	+8	64	7	3	---	---	64	+8	64	7	3	---	3
		358	+39	376	---	15	31	---	358	+39	358	---	15	31	3
		31	+93	31	2	4	8	---	31	+93	31	2	4	8	3
		46	-54	46	---	---	2	---	46	-54	46	---	---	2	3
		72	-52	72	---	8	2	---	72	-52	163	---	8	2	2
		41	-45	41	---	10	---	---	41	-45	41	---	10	---	3
		28	+21	28	3	3	---	---	28	+21	28	3	3	---	3
		82	-26	82	8	5	---	---	82	-26	82	8	5	---	3
		68	-57	68	---	24	24	---	68	-57	68	---	24	24	3
		10	0	10	3	2	---	---	10	0	10	3	2	---	3
		84	-10	84	---	15	2	---	84	-10	84	---	15	2	3
		49	0	49	---	---	---	---	49	0	49	---	---	---	3
7062		23	+28	23	2	---	3	---	23	+28	23	2	---	3	3

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7063		166	+51	166	5	---	6	---	166	+51	166	5	---	6	3
		114	+25	120	---	---	3	---	114	+25	114	---	---	3	3
		377	+63	369	15	---	16	---	377	+63	377	15	---	16	3
		170	0	170	---	---	---	---	170	0	170	---	---	---	3
		174	0	174	---	---	---	---	174	0	174	---	---	---	3
		86	-49	86	---	---	---	---	86	-49	86	---	---	---	3
		29	0	29	---	---	---	---	29	0	29	---	---	---	3
		31	0	31	---	---	---	---	31	0	31	---	---	---	3
		224	0	224	---	---	---	---	224	0	224	---	---	---	3
		39	+30	39	---	3	---	---	39	+30	39	---	3	---	3
		202	-12	202	---	21	13	---	202	-12	202	---	21	13	3
		74	0	74	---	---	---	---	74	0	74	---	---	---	3
		1	-75	1	---	---	---	---	1	-75	1	---	---	---	3
		26	-39	26	---	---	---	---	26	-39	26	---	---	---	3
		27	0	27	---	---	---	---	27	0	27	---	---	---	3
		100	-27	100	---	8	---	---	100	-27	100	---	8	---	3
		422	-48	422	---	65	27	---	422	-48	422	---	65	27	3
		119	-47	100	1	2	14	---	119	-47	293	1	2	14	2
		83	-22	70	70	---	6	---	83	-22	83	6	---	6	3
		150	0	150	---	---	---	---	150	0	150	---	---	---	3
		230	-3	193	---	19	6	---	230	-3	230	---	19	6	3
		44	-6	44	---	---	---	---	44	-6	44	---	---	---	3
		25	-50	25	---	---	---	---	25	-50	25	---	---	---	3
		30	-44	25	---	---	---	---	30	-44	30	---	---	---	3
		7	-42	7	---	---	---	---	7	-42	7	---	---	---	3
		126	0	126	---	---	---	---	126	0	126	---	---	---	3
		49	0	49	---	---	---	---	49	0	49	---	---	---	3
		35	0	35	---	---	---	---	35	0	35	---	---	---	3
		149	0	149	---	---	---	---	149	0	149	---	---	---	3
		311	+48	261	---	---	1	---	311	+48	624	---	---	1	2
7094		19	-76	19	---	---	---	---	19	-76	19	---	---	---	3

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.	USE (AUM'S)	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7095		19	0	19	---	---	---	---	19	0	19	---	---	---	3
		775	-3	651	43	---	48	---	775	-3	775	43	---	48	3
		6	-25	6	---	---	---	---	6	-25	6	---	---	---	3
		41	-34	41	---	---	---	---	41	-34	41	---	---	---	3
		16	-33	16	---	---	---	---	16	-33	16	---	---	---	3
		36	-64	30	---	---	---	---	36	-64	99	---	---	---	3
		18	-51	18	---	---	2	---	18	-51	18	---	---	2	3
		37	-23	37	---	5	---	---	37	-23	37	---	5	---	3
		149	-22	125	---	---	---	---	149	-22	149	---	---	---	3
		38	+41	38	---	---	---	---	38	+41	38	---	---	---	3
		143	-26	120	---	---	---	---	143	-26	143	---	---	---	3
		61	-65	61	---	---	---	---	61	-65	61	---	---	---	3
		233	-51	196	31	14	---	---	233	-51	486	31	14	---	2
		28	-26	28	---	---	---	---	28	-26	28	---	---	---	3
		88	0	88	---	---	---	---	88	0	88	---	---	---	3
		147	-39	123	---	---	---	---	147	-39	147	---	---	---	3
		455	0	455	---	---	---	---	455	0	455	---	---	---	3
		65	0	65	---	---	---	---	65	0	65	---	---	---	3
		9	0	9	---	---	---	---	9	0	9	---	---	---	3
		12	0	12	---	---	---	---	12	0	12	---	---	---	3
		306	0	306	---	---	---	---	306	0	306	---	---	---	3
		332	+24	348	---	24	16	---	332	+24	332	---	24	16	3
		10	+43	10	---	---	---	---	10	+43	10	---	---	---	3
		18	-54	18	---	---	---	---	18	-54	18	---	---	---	3
		178	-31	150	---	13	6	---	178	-31	178	---	13	6	3
		183	-9	154	39	63	13	---	183	-9	378	39	63	13	2
		44	-8	44	---	3	4	---	44	-8	44	---	3	4	3
		6	0	6	---	---	---	---	6	0	6	---	---	---	3
		102	0	102	---	---	---	---	102	0	102	---	---	---	3
		134	0	134	---	---	---	---	134	0	134	---	---	---	3
7125		30	-42	30	---	---	---	---	30	-42	30	---	---	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7126		15	+40	15	---	---	---	---	15	+40	15	---	---	---	3
		23	0	23	---	---	---	---	23	0	23	---	---	---	3
		51	0	51	---	---	---	---	51	0	51	---	---	---	3
		36	0	36	---	---	---	---	36	0	36	---	---	---	3
		65	0	65	---	---	---	---	65	0	65	---	---	---	3
		180	0	180	---	---	---	---	180	0	180	---	---	---	3
		398	+21	334	32	66	---	---	398	+21	778	32	66	---	2
		60	+13	60	3	6	---	---	60	+13	60	3	6	---	3
		172	-48	172	6	6	---	---	172	-48	172	6	6	---	3
		104	-55	87	---	17	---	---	104	-55	104	---	17	---	3
		30	-57	30	---	---	---	---	30	-57	30	---	---	---	3
		22	+10	22	---	6	---	---	22	+10	22	---	6	---	3
		185	+1	155	13	19	5	---	185	+1	451	13	19	5	2
		125	0	125	---	---	---	---	125	0	125	---	---	---	3
		233	-13	196	19	25	---	---	233	-13	420	19	25	---	2
		159	-15	134	11	17	3	---	159	-15	224	11	17	3	2
		25	-62	21	---	---	---	---	25	-62	90	---	---	---	2
		24	-67	20	---	---	---	---	24	-67	49	---	---	---	2
		12	-83	12	---	---	---	---	12	-83	12	---	---	---	3
		36	0	36	---	---	---	---	36	0	36	---	---	---	3
		24	-11	24	1	6	---	---	24	-11	24	1	6	---	3
		23	-14	23	---	---	---	---	23	-14	23	---	---	---	3
		21	-13	21	---	---	---	---	21	-13	21	---	---	---	3
		102	-41	102	---	---	---	---	102	-41	102	---	---	---	3
		81	+224	68	---	---	---	---	81	+224	138	---	---	---	3
		109	-65	109	---	---	---	---	109	-65	109	---	---	---	3
		77	0	77	---	---	---	---	77	0	77	---	---	---	3
		35	0	35	---	---	---	---	35	0	35	---	---	---	3
		24	+140	20	---	---	---	---	24	+140	24	---	---	---	3
		44	+41	44	---	---	---	---	44	+41	44	---	---	---	3
7157		90	-32	90	3	73	---	---	90	-32	90	3	73	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7158		14	-78	14	---	7	---	---	14	-78	14	---	7	---	3
		809	0	809	---	---	---	---	809	0	809	---	---	---	3
		35	-69	35	---	11	---		35	-69	35	---	11	---	3
		133	+14	133	---	---	---		133	+14	133	---	---	---	3
		66	-66	66	---	52	---		66	-66	66	---	52	---	3
		91	+10	91	8	1	---		91	+10	91	8	1	---	3
		84	-49	70	---	---	---		84	-49	84	---	---	---	3
		3	0	3	---	---	---		3	0	3	---	---	---	3
		28	-28	28	---	---	---		28	-28	28	---	---	---	3
		78	0	78	---	---	---		78	0	78	---	---	---	3
		70	-47	70	---	2	---		70	-47	70	---	2	---	3
		89	-22	89	---	3	---		89	-22	89	---	3	---	3
		20	+100	20	---	---	---		20	+100	20	---	---	---	3
		20	-56	20	---	3	---		20	-56	20	---	3	---	3
		310	+210	325	---	28	15		310	+210	310	---	28	15	3
		42	+14	42	---	---	---		42	+14	42	---	---	---	3
		26	+37	26	---	---	---		26	+37	26	---	---	---	3
		324	+116	340	---	---	22		324	+116	324	---	---	22	3
		11	0	11	---	---	---		11	0	11	---	---	---	3
		6	0	6	---	---	---		6	0	6	---	---	---	3
		40	0	40	---	---	---		40	0	40	---	---	---	3
		48	0	48	3	16	---		48	0	48	3	16	---	3
		142	0	142	---	---	---		142	0	142	---	---	---	3
		45	0	45	---	---	---		45	0	45	---	---	---	3
		53	0	53	---	---	---		53	0	53	---	---	---	3
		113	0	113	---	---	---		113	0	113	---	---	---	3
		29	0	29	---	---	---		29	0	29	---	---	---	3
		80	0	80	---	---	---		80	0	80	---	---	---	3
		68	0	68	---	---	---		68	0	68	---	---	---	3
		155	+107	130	---	---	11		155	+107	222	---	---	11	2
7188		19	-30	19	---	---	1		19	-30	19	---	---	1	3

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7189		111	-31	93	---	45	---	---	111	-31	217	---	45	---	2
		71	+18	71	---	25	---	---	71	+18	71	---	25	---	3
		151	-60	127	29	48	15	---	151	-60	460	29	48	15	2
		245	-46	206	---	---	---	---	245	-46	344	---	---	---	2
		63	-38	63	---	---	---	---	63	-38	63	---	---	---	3
		50	0	50	---	---	---	---	50	0	50	---	---	---	3
		41	0	41	---	---	---	---	41	0	41	---	---	---	3
		66	0	66	---	---	---	---	66	0	66	---	---	---	3
		84	0	84	---	---	---	---	84	0	84	---	---	---	3
		97	0	97	---	---	---	---	97	0	97	---	---	---	3
		19	-27	19	---	---	---	---	19	-27	19	---	---	---	3
		415	-48	348	16	32	---	---	415	-48	769	16	32	---	2
		10	0	10	---	---	---	---	10	0	10	---	---	---	3
		131	-29	110	21	3	---	---	131	-29	309	21	3	---	2
		374	-52	314	65	5	---	---	374	-52	940	65	5	---	2
		388	+7	326	40	90	---	---	388	+7	588	40	90	---	2
		203	+3	170	12	27	---	---	203	+3	336	12	27	---	2
		337	+13	283	45	34	---	---	337	+13	788	45	34	---	2
		145	+53	145	---	---	---	---	145	+53	145	---	---	---	3
		199	-5	167	14	25	---	---	199	-5	323	14	25	---	2
		38	+216	38	10	1	---	---	38	+216	38	10	1	---	3
		112	-49	112	27	3	---	---	112	-49	112	27	3	---	3
		124	0	124	---	---	---	---	124	0	124	---	---	---	3
		1,012	+188	850	191	309	---	---	1,012	+188	1,570	191	309	---	2
		282	+86	296	43	59	---	---	282	+86	334	43	59	---	1
		149	-16	149	9	---	---	---	149	-16	149	9	---	---	3
		94	+1	78	10	8	---	---	94	+1	196	10	8	---	2
		116	-66	116	---	---	---	---	116	-66	116	---	---	---	3
		1,052	+98	884	116	293	---	---	1,052	+98	1,243	116	293	---	2
		1,673	+362	1,405	252	147	---	---	1,673	+362	2,073	252	147	---	2
7507		3,167	+444	2,660	839	1,303	---	---	3,167	+444	3,667	839	1,303	---	2

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		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7508		86	+45	86	10	---	---	---	86	+45	86	10	---	---	3
		406	+61	341	40	90	---	---	406	+61	645	40	90	---	2
		1,638	+588	1,376	384	1,212	---	---	1,638	+588	1,983	384	1,212	---	2
		49	-18	49	1	2	---	---	49	-18	49	1	2	---	3
		8	+166	8	---	12	---	---	8	+166	8	---	12	---	3
		52	-42	52	---	4	---	---	52	-42	52	---	4	---	3
		18	0	18	---	---	---	---	18	0	18	---	---	---	3
		48	0	48	---	---	---	---	48	0	48	---	---	---	3
		44	0	44	---	---	---	---	44	0	44	---	---	---	3
		225	0	225	---	---	---	---	225	0	225	---	---	---	3
		20	0	17	---	---	---	---	20	0	20	---	---	---	2
		120	0	120	---	---	---	---	120	0	120	---	---	---	3
		145	0	145	---	---	---	---	145	0	145	---	---	---	3
		30	0	30	---	---	---	---	30	0	30	---	---	---	3
		783	+67	658	81	99	---	---	783	+67	1,144	81	99	---	2
		12	0	12	---	---	---	---	12	0	12	---	---	---	3
		98	0	98	---	---	---	---	98	0	98	---	---	---	3
		105	0	105	---	---	---	---	105	0	105	---	---	---	3
		24	0	24	---	---	---	---	24	0	24	---	---	---	3
		225	0	225	---	---	---	---	225	0	225	---	---	---	3
		139	+101	145	15	39	---	---	139	+101	168	15	39	---	1
		242	+42	242	14	165	---	---	242	+42	242	14	165	---	3
		720	0	720	---	---	---	---	720	0	720	---	---	---	3
		767	+150	644	55	293	---	---	767	+150	1,172	55	293	---	2
		268	0	268	---	---	---	---	268	0	268	---	---	---	3
		97	0	97	---	---	---	---	97	0	97	---	---	---	3
		249	+18	209	32	68	---	---	249	+18	372	32	68	---	2
		632	+30	662	24	2	---	---	632	+30	683	24	2	---	1
		177	-41	149	---	15	---	---	177	-41	328	---	15	---	2
		7	0	7	---	1	---	---	7	0	7	---	1	---	3
7545		303	0	254	---	---	---	---	303	0	303	---	---	---	2

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
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		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7546		133	+77	133	16	42	---	---	133	+77	133	16	42	---	3
		118	+4	118	6	20	---	---	118	+4	118	6	20	---	3
		243	+285	255	27	56	---	---	243	+285	288	27	56	---	1
		87	-38	73	---	---	---	---	87	-38	179	---	---	---	2
		167	+12	140	16	13	---	---	167	+12	321	16	13	---	2
		285	+21	298	1	64	---	---	285	+21	370	1	64	---	1
		378	+54	317	93	120	---	---	378	+54	704	93	120	---	2
		295	0	295	---	---	---	---	295	0	295	---	---	---	3
		59	0	59	7	8	---	---	59	0	59	7	8	---	3
		674	+10	674	7	141	---	---	674	+10	674	7	141	---	3
		10	0	10	---	---	---	---	10	0	10	---	---	---	3
		458	+9	385	47	40	---	---	458	+9	538	47	40	---	2
		560	+8	560	---	133	---	---	560	+8	560	---	133	---	3
		292	+21	306	12	22	---	---	292	+21	333	12	22	---	1
		66	+8	66	---	17	---	---	66	+8	66	---	17	---	3
		138	+59	138	5	66	---	---	138	+59	138	5	66	---	3
		508	+34	426	---	330	---	---	508	+34	748	---	330	---	2
		88	0	88	---	---	---	---	88	0	88	---	---	---	3
		1,254	-22	1,053	88	129	---	---	1,254	-22	1,543	88	129	---	2
		196	+73	165	22	48	---	---	196	+73	451	22	48	---	2
		184	0	184	---	---	---	---	184	0	184	---	---	---	3
		312	+74	262	22	136	---	---	312	+74	492	22	136	---	2
		20	0	20	---	---	---	---	20	0	20	---	---	---	3
		106	-12	106	---	---	---	---	106	-12	106	---	---	---	3
		622	+80	522	51	199	---	---	622	+80	649	51	199	---	2
		302	+44	253	15	113	---	---	302	+44	337	15	113	---	2
		22	0	22	---	---	---	---	22	0	22	---	---	---	3
		44	0	44	---	---	---	---	44	0	44	---	---	---	3
		114	+2	114	12	---	---	---	114	+2	114	12	---	---	3
		70	+338	70	12	22	---	---	70	+338	70	12	22	---	3
7585		157	+9	165	---	---	---	---	157	+9	209	---	---	---	1

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INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7586		18	+50	18	2	3	---	---	18	+50	18	2	3	---	3
		115	+38	115	14	6	---	---	115	+38	115	14	6	---	3
		333	-5	280	---	2	---	---	333	-5	333	---	2	---	2
		20	0	17	---	---	---	---	20	0	40	---	---	---	2
		49	0	49	---	---	---	---	49	0	49	---	---	---	3
		80	+33	80	6	5	---	---	80	+33	80	6	5	---	3
		4	0	4	---	---	---	---	4	0	4	---	---	---	3
		24	0	24	---	---	---	---	24	0	24	---	---	---	3
		460	+11	386	32	27	---	---	460	+11	609	32	27	---	2
		120	0	120	---	---	---	---	120	0	120	---	---	---	3
		40	0	40	---	---	---	---	40	0	40	---	---	---	3
		104	-8	104	---	13	---	---	104	-8	104	---	13	---	3
		121	+73	121	15	18	---	---	121	+73	121	15	18	---	3
		170	+14	170	12	1	---	---	170	+14	170	12	1	---	3
		57	0	57	---	---	---	---	57	0	57	---	---	---	3
		57	+12	57	4	18	---	---	57	+12	57	4	18	---	3
		198	+68	166	28	71	---	---	198	+68	333	28	71	---	2
		202	+11	170	19	18	---	---	202	+11	402	19	18	---	2
		67	+5	56	---	9	---	---	67	+5	106	---	9	---	2
		14	0	15	---	---	---	---	14	0	14	---	---	---	1
		84	0	84	---	---	---	---	84	0	84	---	---	---	3
		173	0	173	---	---	---	---	173	0	173	---	---	---	3
		7	0	7	---	---	---	---	7	0	7	---	---	---	3
		24	0	24	---	---	---	---	24	0	24	---	---	---	3
		132	-2	132	2	1	---	---	132	-2	132	2	1	---	3
		6	0	6	---	---	---	---	6	0	6	---	---	---	3
		38	0	38	---	---	---	---	38	0	38	---	---	---	3
		6	0	6	---	---	---	---	6	0	6	---	---	---	3
		102	0	86	---	---	---	---	102	0	102	---	---	---	2
		108	0	108	---	---	---	---	108	0	108	---	---	---	3
7785		20	0	20	---	---	---	---	20	0	20	---	---	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
TOTAL LIVE-STOCK AUM's															
INIT.		52,652							52,652						
LONG-TERM				48,754							65,531				
% CHANGE FROM CRNT. AUTHORIZED USE - INIT.			+15							+15					
% CHANGE FROM CRNT. AUTHORIZED USE - LONG TERM				+7							+44				
TOTAL WILD-LIFE AUM's					3,850	8,812	488					3,850	8,812	488	

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		ENERGY AND MINERALS							ECONOMIC BENEFIT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
TOTAL CATE-GORY 1 ALLOTS								---							11
TOTAL CATE-GORY 2 ALLOTS								---							63
TOTAL CATE-GORY 3 ALLOTS								---							237

INIT. = INITIAL

CRNT. = CURRENT

ALLOTS = ALLOTMENTS

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7001		75	-25	75	5	1	---	3	58	-42	58	10	13	---	3
		186	-7	261	---	---	8	2	158	-21	233	---	---	36	2
		476	+42	602	89	52	---	2	251	-25	377	157	209	---	2
		383	+44	544	53	30	14	2	244	-8	405	95	127	14	2
		26	-19	26	---	---	---	3	26	-19	26	---	---	---	3
		9	-36	9	---	---	---	3	9	-36	9	---	---	---	3
		1	0	1	---	---	---	3	1	0	1	---	---	---	3
		105	0	105	---	---	---	2	105	0	105	---	---	---	2
		60	0	60	---	---	---	2	60	0	60	---	---	---	2
		157	-72	157	---	32	---	3	157	-72	157	---	22	---	3
		30	0	30	---	---	---	3	30	0	30	---	---	---	3
		93	0	93	---	---	---	3	93	0	93	---	---	---	3
		74	0	74	---	---	---	3	74	0	74	---	---	---	3
		114	-43	288	245	79	32	2	88	-56	262	253	97	32	2
		1,140	+470	1,351	848	1,591	67	1	608	+204	819	1,008	1,963	67	1
		61	-57	217	138	105	---	2	57	-60	213	138	109	---	2
		283	+18	359	218	183	---	1	268	+12	344	218	198	---	1
		119	-77	308	109	---	25	2	91	-82	280	117	---	45	2
		135	-23	141	---	2	1	1	62	-64	68	---	53	23	1
		898	-23	1,430	50	---	18	2	631	-46	1,163	237	---	98	2
		66	-43	66	15	81	---	3	36	-69	36	24	102	---	3
		23	-48	23	---	---	---	3	23	-48	23	---	---	---	3
		256	-39	769	---	54	---	2	236	-44	749	---	74	---	2
		40	-60	40	---	22	---	3	29	-71	29	---	33	---	3
		53	-21	53	---	12	---	3	41	-39	41	---	24	---	3
		5	+150	5	---	---	---	3	5	+150	5	---	---	---	3
		8	+160	8	---	2	---	3	2	-60	2	---	8	---	3
		12	-66	12	---	---	---	3	12	-66	12	---	---	---	3
		17	0	17	---	---	---	3	17	0	17	---	---	---	3
		97	-18	97	71	---	---	3	57	-52	57	111	---	---	3
7031		189	-28	45	---	118	34	3	145	-45	407	---	162	34	2

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7032		218	-13	526	60	29	1	2	198	-21	506	66	43	1	2
		64	0	64	---	---	---	3	64	0	64	---	---	---	3
		11	-56	11	21	---	---	3	10	-60	10	22	---	---	3
		20	0	20	---	---	---	3	20	0	20	---	---	---	3
		38	0	38	---	---	---	3	38	0	38	---	---	---	3
		9	-59	9	---	---	---	3	9	-59	9	---	---	---	3
		312	0	312	---	---	---	3	312	0	312	---	---	---	3
		126	0	126	---	---	---	3	126	0	126	---	---	---	3
		19	+6	19	19	7	---	3	14	-22	14	19	12	---	3
		19	+90	19	29	17	---	3	8	-20	8	29	28	---	3
		14	-48	14	15	---	---	3	10	-63	10	19	---	---	3
		39	-53	39	---	---	---	3	39	-53	39	---	---	---	3
		456	-19	509	---	56	31	1	288	-49	341	---	174	81	1
		138	+53	166	---	15	1	1	104	+16	132	---	39	11	1
		38	-46	91	4	---	3	2	38	-46	91	4	---	3	2
		9	-36	9	---	---	---	3	9	-36	9	---	---	---	3
		90	0	90	---	---	---	3	90	0	90	---	---	---	3
		25	-7	25	13	23	---	3	25	-7	25	13	23	---	3
		46	-22	46	23	5	---	3	32	-46	32	27	15	---	3
		337	+31	363	---	22	45	1	240	-7	266	---	90	74	1
		21	+31	21	7	6	11	3	17	+6	17	7	10	11	3
		44	-57	44	---	1	3	3	39	-61	39	---	6	3	3
		67	-55	158	---	12	3	2	53	-65	144	---	22	7	2
		36	-52	36	---	15	---	3	30	-60	30	---	21	---	3
		20	-13	20	10	4	---	3	17	-26	17	10	7	---	3
		60	-46	60	28	7	---	3	33	-70	33	28	34	---	3
		48	-70	182	---	34	34	2	48	-70	182	---	34	34	2
		3	-70	3	9	3	---	3	1	-90	1	9	5	---	3
		77	-17	77	---	21	3	3	58	-38	58	---	34	9	3
		49	0	49	---	---	---	3	49	0	49	---	---	---	3
7062		17	-6	17	7	---	4	3	7	-61	7	10	---	11	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7063		152	+38	152	16	---	9	3	65	-41	65	42	---	70	3
		113	+24	137	---	---	4	1	81	-11	105	---	---	36	1
		335	+45	356	50	---	23	1	226	-2	247	83	---	99	1
		170	0	170	---	---	---	3	170	0	170	---	---	---	3
		174	0	174	---	---	---	3	174	0	174	---	---	---	3
		86	-49	86	---	---	---	3	86	-49	86	---	---	---	3
		29	0	29	---	---	---	3	29	0	29	---	---	---	3
		31	0	31	---	---	---	3	31	0	31	---	---	---	3
		224	0	224	---	---	---	3	224	0	224	---	---	---	3
		37	+23	37	---	5	---	3	23	-23	23	---	19	---	3
		188	-18	207	---	30	18	1	118	-48	137	---	79	39	1
		74	0	74	---	---	---	3	74	0	74	---	---	---	3
		1	-75	1	---	---	---	3	1	-75	1	---	---	---	3
		25	-42	25	1	---	---	3	4	-90	4	22	---	---	3
		27	0	27	---	---	---	3	27	0	27	---	---	---	3
		96	-30	259	---	12	---	2	74	-46	237	---	34	---	2
		382	-53	1,040	---	93	39	2	340	-58	998	---	122	52	2
		109	-52	283	4	3	20	2	46	-79	220	23	47	20	2
		66	-38	168	20	---	9	2	38	-64	140	28	---	29	2
		150	0	150	---	---	---	3	150	0	150	---	---	---	3
		220	-7	414	---	27	8	2	208	-12	402	---	39	8	2
		44	-6	44	---	---	---	3	44	-6	44	---	---	---	3
		25	-50	25	---	---	---	3	25	-50	25	---	---	---	3
		30	-44	77	---	---	---	2	30	-44	77	---	---	---	2
		7	-42	7	---	---	---	3	7	-42	7	---	---	---	3
		126	0	126	---	---	---	3	126	0	126	---	---	---	3
		49	0	49	---	---	---	3	49	0	49	---	---	---	3
		35	0	35	---	---	---	3	35	0	35	---	---	---	3
		149	0	149	---	---	---	3	149	0	149	---	---	---	3
		310	+48	623	---	---	2	2	176	-16	489	---	---	136	2
7094		19	-76	19	---	---	---	3	19	-76	19	---	---	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7095		19	0	19	---	---	---	3	19	0	19	---	---	---	3
		652	-18	1,207	145	---	69	2	646	-19	1,201	145	---	75	2
		6	-25	6	---	---	1	3	2	-75	2	---	---	5	3
		41	-34	41	---	---	---	3	41	-34	41	---	---	---	3
		16	-33	16	---	---	---	3	16	-33	16	---	---	---	3
		36	-64	99	---	---	---	2	36	-64	99	---	---	---	2
		17	-54	17	---	---	3	3	17	-54	17	---	---	3	3
		35	-27	35	---	7	---	3	27	-44	27	---	15	---	3
		149	-22	254	---	---	---	2	149	-22	254	---	---	---	2
		36	+33	36	---	2	---	3	18	-33	18	---	20	---	3
		143	-26	234	---	---	---	2	143	-26	234	---	---	---	2
		61	-65	61	---	---	---	3	61	-65	61	---	---	---	3
		156	-67	409	102	20	---	2	95	-80	348	102	81	---	2
		25	-34	25	---	---	3	3	16	-58	16	---	---	12	3
		88	0	88	---	---	---	3	88	0	88	---	---	---	3
		147	-39	242	---	---	---	2	147	-39	242	---	---	---	2
		455	0	455	---	---	---	3	455	0	455	---	---	---	3
		65	0	65	---	---	---	3	65	0	65	---	---	---	3
		9	0	9	---	---	---	3	9	0	9	---	---	---	3
		12	0	12	---	---	---	3	12	0	12	---	---	---	3
		306	0	306	---	---	---	3	306	0	306	---	---	---	3
		315	+18	338	---	34	23	1	186	-31	209	---	124	62	1
		7	0	7	---	3	---	3	6	-14	6	---	4	---	3
		18	-54	18	---	---	---	3	18	-54	18	---	---	---	3
		170	-34	440	---	18	9	2	170	-34	440	---	18	9	2
		60	-70	255	129	90	19	2	58	-71	253	129	92	19	2
		41	-15	41	---	4	6	3	39	-19	39	---	6	6	3
		6	0	6	---	---	---	3	6	0	6	---	---	---	3
		102	0	102	---	---	---	3	102	0	102	---	---	---	3
		134	0	134	---	---	---	3	134	0	134	---	---	---	3
7125		30	-42	30	---	---	---	3	30	-42	30	---	---	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7126		15	-40	15	---	---	---	3	15	+67	15	---	---	---	3
		23	0	23	---	---	---	3	23	0	23	---	---	---	3
		51	0	51	---	---	---	3	51	0	51	---	---	---	3
		36	0	36	---	---	---	3	36	0	36	---	---	---	3
		65	0	65	---	---	---	3	65	0	65	---	---	---	3
		180	0	180	---	---	---	3	180	0	180	---	---	---	3
		293	-11	673	108	95	---	2	186	-43	566	140	170	---	2
		51	-4	51	9	9	---	3	32	-40	32	15	22	---	3
		150	-55	150	28	8	---	3	141	-58	141	31	14	---	3
		96	-58	278	---	25	---	2	86	-63	268	---	36	---	2
		30	-57	30	---	---	---	3	30	-57	30	---	---	---	3
		20	0	20	---	8	---	3	17	-15	17	---	11	---	3
		144	-21	410	44	27	7	2	123	-33	389	50	42	7	2
		125	0	125	---	---	---	3	125	0	125	---	---	---	3
		177	-33	364	63	36	1	2	153	-43	340	70	53	1	2
		123	-33	188	38	24	5	2	90	-52	155	48	47	5	2
		25	-62	90	---	---	---	2	25	-63	90	---	---	---	2
		24	-67	49	---	---	---	2	24	-68	49	---	---	---	2
		12	-83	12	---	---	---	3	12	-84	12	---	---	---	3
		36	0	36	---	---	---	3	36	0	36	---	---	---	3
		18	-33	18	4	8	1	3	18	-33	18	4	8	1	3
		23	-14	23	---	---	---	3	23	-15	23	---	---	---	3
		21	-13	21	---	---	---	3	21	-13	21	---	---	---	3
		102	-41	102	---	---	---	3	102	-42	102	---	---	---	3
		81	+224	138	---	---	---	2	81	+224	138	---	---	---	2
		109	-65	109	---	---	---	3	109	-65	109	---	---	---	3
		77	0	77	---	---	---	3	77	0	77	---	---	---	3
		35	0	35	---	---	---	3	35	0	35	---	---	---	3
		24	+140	42	---	---	---	2	24	+140	42	---	---	---	2
		44	+41	44	---	---	---	3	44	+42	44	---	---	---	3
7157		53	-60	53	9	104	---	3	34	-75	34	15	117	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7158		11	-82	11	---	10	---	3	7	-89	7	---	14	---	3
		809	0	809	---	---	---	3	809	0	809	---	---	---	3
		30	-73	30	---	16	---	3	30	-73	30	---	16	---	3
		133	+14	133	---	---	---	3	133	+14	133	---	---	---	3
		43	-78	43	---	75	---	3	30	-84	30	---	88	---	3
		70	-16	70	28	2	---	3	70	-16	70	28	2	---	3
		84	-49	120	---	---	---	2	84	-49	120	---	---	---	2
		3	0	3	---	---	---	3	3	0	3	---	---	---	3
		28	-28	28	---	---	---	3	28	-28	28	---	---	---	3
		78	0	78	---	---	---	3	78	0	78	---	---	---	3
		69	-47	69	---	3	---	3	52	-60	52	---	20	---	3
		87	-24	87	---	5	---	3	64	-44	64	---	28	---	3
		20	+100	20	---	---	---	3	20	+100	20	---	---	---	3
		19	-58	19	---	4	---	3	16	-64	16	---	7	---	3
		291	+191	308	---	40	22	1	171	+71	188	---	124	58	1
		42	14	42	---	---	---	3	42	+14	42	---	---	---	3
		26	37	26	---	---	---	3	26	-37	26	---	---	---	3
		315	+110	337	---	---	31	1	218	+45	240	---	---	128	1
		11	0	11	---	---	---	3	11	0	11	---	---	---	3
		6	0	6	---	---	---	3	6	0	6	---	---	---	3
		40	0	40	---	---	---	3	40	0	40	---	---	---	3
		33	-31	33	11	23	---	3	23	-52	23	14	30	---	3
		142	0	142	---	---	---	3	142	0	142	---	---	---	3
		45	0	45	---	---	---	3	45	0	45	---	---	---	3
		53	0	53	---	---	---	3	53	0	53	---	---	---	3
		113	0	113	---	---	---	3	113	0	113	---	---	---	3
		29	0	29	---	---	---	3	29	0	29	---	---	---	3
		80	0	80	---	---	---	3	80	0	80	---	---	---	3
		68	0	68	---	---	---	3	68	0	68	---	---	---	3
		150	+100	217	---	---	16	2	107	+43	174	---	---	59	2
7188		18	-33	18	---	---	2	3	11	-59	11	---	---	9	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7189		92	-43	198	---	64	---	2	60	-63	166	---	96	---	2
		60	0	60	---	36	---	3	14	-77	14	---	82	---	3
		55	-77	364	98	69	21	2	55	-77	364	98	69	21	2
		245	-46	344	---	---	---	2	245	-46	344	---	---	---	2
		63	-38	63	---	---	---	3	63	-38	63	---	---	---	3
		50	0	50	---	---	---	3	50	0	50	---	---	---	3
		41	0	41	---	---	---	3	41	0	41	---	---	---	3
		66	0	66	---	---	---	3	66	0	66	---	---	---	3
		84	0	84	---	---	---	3	84	0	84	---	---	---	3
		97	0	97	---	---	---	3	97	0	97	---	---	---	3
		19	-27	19	---	---	---	3	19	-27	19	---	---	---	3
		362	-55	716	55	46	---	2	350	-56	704	59	54	---	2
		10	0	10	---	---	---	3	10	0	10	---	---	---	3
		79	-57	257	71	5	---	2	78	-58	256	72	6	---	2
		220	-72	786	217	7	---	2	201	-74	767	223	20	---	2
		255	-30	455	135	128	---	2	178	-51	378	158	182	---	2
		164	-17	297	39	39	---	2	135	-32	268	48	59	---	2
		219	-26	670	149	48	---	2	206	-31	657	153	57	---	2
		145	+53	145	---	---	---	3	145	+53	145	---	---	---	3
		156	-25	280	46	36	---	2	129	-38	253	54	55	---	2
		12	0	12	35	2	---	3	12	0	12	35	2	---	3
		46	-80	46	91	5	---	3	44	-81	44	91	7	---	3
		124	0	124	---	---	---	3	124	0	124	---	---	---	3
		433	+61	991	638	441	---	2	365	+4	923	658	489	---	2
		156	+3	208	144	84	---	1	98	-36	150	161	125	---	1
		128	-28	128	30	---	---	3	100	-44	100	58	---	---	3
		66	-29	168	35	11	---	2	47	-49	149	41	24	---	2
		116	-66	116	---	---	---	3	116	-66	116	---	---	---	3
		656	+23	847	386	419	---	2	286	-46	477	497	678	---	2
		1,023	+183	1,423	839	210	---	2	512	+41	912	992	568	---	2
7507		652	+12	1,152	2,796	1,861	---	2	584	0	1,084	2,816	1,909	---	2

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7508		61	+3	61	35	---	---	3	28	-53	28	68	---	---	3
		273	+8	512	134	129	---	2	204	-19	443	155	177	---	2
		224	-6	569	1,279	1,731	---	2	184	-23	529	1,291	1,759	---	2
		46	-23	46	3	3	---	3	35	-42	35	6	10	---	3
		3	0	3	---	17	---	3	2	-33	2	---	18	---	3
		50	-44	50	---	6	---	3	33	-63	33	---	23	---	3
		18	0	18	---	---	---	3	18	0	18	---	---	---	3
		48	0	48	---	---	---	3	48	0	48	---	---	---	3
		44	0	44	---	---	---	3	44	0	44	---	---	---	3
		225	0	225	---	---	---	3	225	0	225	---	---	---	3
		20	0	20	---	---	---	2	20	0	20	---	---	---	2
		120	0	120	---	---	---	3	120	0	120	---	---	---	3
		145	0	145	---	---	---	3	145	0	145	---	---	---	3
		30	0	30	---	---	---	3	30	0	30	---	---	---	3
		553	+18	914	269	141	---	2	380	-19	741	321	262	---	2
		12	0	12	---	---	---	3	12	0	12	---	---	---	3
		98	0	98	---	---	---	3	98	0	98	---	---	---	3
		105	0	105	---	---	---	3	105	0	105	---	---	---	3
		24	0	24	---	---	---	3	24	0	24	---	---	---	3
		225	0	225	---	---	---	3	225	0	225	---	---	---	3
		86	+25	115	51	55	---	1	69	0	98	56	67	---	1
		137	-20	137	48	236	---	3	98	-43	98	60	263	---	3
		720	0	720	---	---	---	3	720	0	720	---	---	---	3
		514	+67	919	182	419	---	2	378	-23	783	223	514	---	2
		268	0	268	---	---	---	3	268	0	268	---	---	---	3
		97	0	97	---	---	---	3	97	0	97	---	---	---	3
		145	-31	268	107	97	---	2	92	-56	215	123	134	---	2
		576	+19	627	79	3	---	1	311	-36	362	158	189	---	1
		170	-32	321	---	22	---	2	101	-60	252	---	91	---	2
		7	0	7	---	1	---	3	5	-28	5	---	3	---	3
7545		303	0	303	---	---	---	2	303	0	303	---	---	---	2

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7546		76	+1	76	55	60	---	3	44	-41	44	65	82	---	3
		97	-14	97	19	28	---	3	42	-63	42	35	67	---	3
		157	+149	202	89	80	---	1	79	+25	124	112	135	---	1
		87	-38	179	---	---	---	2	87	-38	179	---	---	---	2
		123	-17	277	54	19	---	2	70	-53	224	70	56	---	2
		256	+8	341	3	91	---	1	115	-51	200	45	190	---	1
		111	-55	437	309	171	---	2	111	-55	437	309	171	---	2
		295	0	295	---	---	---	3	295	0	295	---	---	---	3
		40	-32	40	23	11	---	3	15	-75	15	30	29	---	3
		597	-2	597	23	202	---	3	407	-33	407	80	335	---	3
		10	0	10	---	---	---	3	10	0	10	---	---	---	3
		331	-21	411	157	57	---	2	143	-66	223	213	189	---	2
		503	-3	503	---	190	---	3	282	-46	282	---	411	---	3
		253	+5	294	41	32	---	1	113	-53	154	83	130	---	1
		59	-3	59	---	24	---	3	59	-3	59	---	24	---	3
		98	+13	98	16	95	---	3	86	-1	86	20	103	---	3
		366	-4	606	---	472	---	2	331	-13	571	---	507	---	2
		88	0	88	---	---	---	3	88	0	88	---	---	---	3
		991	-38	1,280	295	185	---	2	386	-76	675	476	609	---	2
		122	+8	377	75	69	---	2	90	-20	345	85	91	---	2
		184	0	184	---	---	---	3	184	0	184	---	---	---	3
		203	+13	383	73	194	---	2	118	-34	298	98	254	---	2
		20	0	20	---	---	---	3	20	0	20	---	---	---	3
		106	-12	106	---	---	---	3	106	-12	106	---	---	---	3
		417	+21	444	171	284	---	2	332	-4	359	196	344	---	2
		217	+3	252	51	162	---	2	163	-22	198	67	200	---	2
		22	0	22	---	---	---	3	22	0	22	---	---	---	3
		44	0	44	---	---	---	3	44	0	44	---	---	---	3
		85	-24	85	41	---	---	3	58	-48	58	68	---	---	3
		32	+100	32	40	32	---	3	32	+100	32	40	32	---	3
7585		157	+9	209	---	---	---	1	157	+9	209	---	---	---	1

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
7586		12	0	12	7	4	---	3	4	-67	4	9	10	---	3
		78	-6	78	48	9	---	3	37	-55	37	60	38	---	3
		332	-5	332	---	3	---	2	179	-49	179	---	156	---	2
		20	0	40	---	---	---	2	20	0	40	---	---	---	2
		49	0	49	---	---	---	3	49	0	49	---	---	---	3
		65	+8	65	19	7	---	3	55	-8	55	22	14	---	3
		4	0	4	---	---	---	3	4	0	4	---	---	---	3
		24	0	24	---	---	---	3	24	0	24	---	---	---	3
		373	-10	522	107	39	---	2	284	-31	433	134	101	---	2
		120	0	120	---	---	---	3	120	0	120	---	---	---	3
		40	0	40	---	---	---	3	40	0	40	---	---	---	3
		99	-12	99	---	18	---	3	40	-65	40	---	77	---	3
		78	+11	78	50	26	---	3	70	0	70	50	34	---	3
		142	-5	142	39	2	---	3	136	-9	136	39	8	---	3
		57	0	57	---	---	---	3	57	0	57	---	---	---	3
		40	-22	40	13	26	---	3	23	-55	23	18	38	---	3
		101	-14	236	95	101	---	2	59	-50	194	108	29	---	2
		149	-18	349	64	26	---	2	103	-43	303	78	58	---	2
		63	-2	102	---	13	---	2	28	-56	67	---	48	---	2
		14	0	14	---	---	---	1	14	0	14	---	---	---	1
		84	0	84	---	---	---	3	84	0	84	---	---	---	3
		173	0	173	---	---	---	3	173	0	173	---	---	---	3
		7	0	7	---	---	---	3	7	0	7	---	---	---	3
		24	0	24	---	---	---	3	24	0	24	---	---	---	3
		127	-6	127	7	1	---	3	73	-46	73	23	29	---	3
		6	0	6	---	---	---	3	6	0	6	---	---	---	3
		38	0	38	---	---	---	3	38	0	38	---	---	---	3
		6	0	6	---	---	---	3	6	0	6	---	---	---	3
		102	0	102	---	---	---	2	102	0	102	---	---	---	2
		108	0	108	---	---	---	3	108	0	108	---	---	---	3
7785		20	0	20	---	---	---	3	20	0	20	---	---	---	3

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
TOTAL LIVE-STOCK AUM's															
INIT.		39,726							31,305						
LONG-TERM				56,050							47,404				
% CHANGE FROM CRNT. AUTHORIZED USE - INIT.			-13							-31					
% CHANGE FROM CRNT. AUTHORIZED USE - LONG TERM				+23							+4				
TOTAL WILD-LIFE AUM's					12,870	12,615	766					14,898	17,907	1563	

APPENDIX 3

INITIAL ALLOTMENT CATEGORIZATION AND FORAGE ALLOCATION
(BY ALTERNATIVE)

		RENEWABLE RESOURCE							RECREATION & NATURAL ENVIRONMENT						
	PRESENT AUTHORZ USE (AUM'S)	LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)				LIVESTOCK ALLOCATION (AUM'S)			INITIAL WILDLIFE ALLOCATION (AUM'S)			
ALLOT NO.		INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY	INITIAL	% CHANGE	EXPECTED LONG TERM	ELK	DEER	ANT	MGMT CATEGORY
TOTAL CATE-GORY 1 ALLOTS								20							20
TOTAL CATE-GORY 2 ALLOTS								81							81
TOTAL CATE-GORY 3 ALLOTS								210							210

INIT. = INITIAL

CRNT. = CURRENT

ALLOTS = ALLOTMENTS

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES
MANAGEMENT LEVEL 1 AND 2
ALLOTMENTS

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES - MANAGEMENT LEVEL 1 & 2 ALLOTMENTS

This appendix displays the resource problems/ conflicts, management objectives/opportunities and range improvements identified for each allotment in Management Level 1 and Level 2. This appendix does not include Management Level 3 allotments, because with very few exceptions we do not consider range improvements on these allotments to be economically cost effective at this time.

The appendix displays actions that would be taken under the Proposed, Eco nomic, Renewable Resources, Recreation and Natural Environment Alternatives. The Continuation of Current Management and Energy and Minerals Alternatives do not provide for an increase in intensive management, therefore, no new range improvements are proposed.

Management objectives and opportunities have been identified to improve range conditions and increase livestock forage production to the long term allocations as shown in Appendix 3 for the various alternatives.

The range improvements listed in this appendix are the Bureau's best estimate of what is required to implement the various alternatives. The exact amount of required range improvements will be determined during development of activity plans, therefore, the amount shown could be subject to change. All proposed range improvements are subject to site specific environmental analysis.

In reviewing the following table it must be noted that the Management Objectives/Opportunities have been standardized and coded as represented below:

A. Improve overall allotment forage production and condition by developing a grazing system compatable with other resource uses. The grazing system shall provide for adjustments in livestock use levels, pasture deferrment or rest, promote increase livestock distribution and may include other management opportunities such as:

1. Enhance forage plant phenological development by adjusting livestock seasons of use.

2. Protect and enhance riparian areas by making allowances for livestock seasonal rest or developing protective fencing.

3. Maintain or improve big game winter ranges through the regulation of livestock use and/or manipulation of critical habitat areas.

4. Protect and/or improve "highly erosive" or sensitive watershed areas through the development of improvement projects designed to promote watershed stability (i.e. protective fencing, waterspreaders, gully control structures).

B. Promote opportunities for early spring grazing by developing spring pasture. Development would include land treatments (brush removal) and seeding to forage species that exhibit early season growth characteristics and the ability to sustain production under continuous spring use.

C. Combine the allotment with other allotments in order to increase the size of pastures which will provide for more manageable grazing units and allow for more flexibility in developing improvement practices.

D. Consolidate grazing allotments/management opportunities with other land use agencies.

E. Revise and updatge existing Allotment Management Plans by correcting deficiences in grazing authorizations.

F. Maintain the existing allotment management situation.

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT. NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7002	Forage conditions unsatisfactory, currently producing 71% of estimated potential. Livestock distribution patterns poor, resulting in over utilization of forage species on portions of allotment. Continual spring grazing.	A1, Cw/7003, 7004			2					300	
7003	Forage condition satisfactory. Livestock distribution patterns poor. Continual spring grazing.	A1, Cw/7002, 7004			1						1,000
7004	Forage conditions unsatisfactory, currently producing 70% of estimated potential. Poor livestock distribution patterns.	A Cw/7002, 7003			1		2				800
7008	Lacks range improvement facilities (water). Is not of sufficient size to allow for improvement practices as a single unit.	Cw/7009, 7032				2					
7009	Same as 7008	Cw/7008, 7032				2					
7014	Forage condition unsatisfactory, currently only producing 40% of estimated potential. Surface erosion occurring on portions of allotment. Continual spring-summer grazing.	A1, 4 Cw/7015, 7016, 7017, 7019							500	1,000	
7015	Overall forage condition satisfactory, currently producing 84% of estimated potential. Small localized area of elk & deer winter-spring range in south portion of allotment in poor condition.	A3, Cw/7014, 7016, 7017, 7019	4						500	500	

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7016	Forage condition unsatisfactory, producing only 28% of estimated potential.	A1, Cw/7014, 7015 7017, 7019									
7017	Forage condition satisfactory, currently producing 79% of estimated potential.	Cw/7014, 7015 7016, 7019									
7018	Forage condition unsatisfactory, currently producing only 39% of estimated potential. Continual spring-summer grazing.	A1, Cw/7020									
7019	Forage condition satisfactory, currently producing 95% of estimated potential.	Cw/7014, 7015, 7016, 7017									
7020	Forage condition unsatisfactory, currently producing only 63% of estimated potential. Riparian habitat in unsatisfactory condition. Soil erosion occurring on portions of allotment. Continual spring-summer grazing.	A1, 2, 4, Cw/7018	7		1	1					500
7023	Forage condition unsatisfactory, currently producing only 33% of estimated potential. Soil erosion occurring on portions of allotment. Continual spring grazing.	A1, 4		2	1		2				400
7031	Forage condition unsatisfactory, currently producing only 42% of estimated potential.	E									
7032	Forage condition unsatisfactory, currently producing only 41% of estimated potential. Riparian habitat on Deer Creek in poor condition. Excessive dense stands of big	A1, 2, Cw/7008, 7009								900	

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7032 (CONT.)	sagebrush occupy major portions of the allotment. Continual spring grazing.										
7044	Forage condition satisfactory, currently producing 90% of estimated potential.	Cw/7045, 7046	2	1							
7045	Forage condition satisfactory, currently producing 83% of estimated potential.	Cw/7044, 7046								500	
7046	Forage condition unsatisfactory, currently producing only 42% of estimated potential. Excessive dense stands of big sage-brush occupy major portions of allotment. Continual spring grazing.	A1, Cw/7044, 7045		1							
7051	Forage condition satisfactory, currently producing 92% of estimated potential. Overall management situation adequate.	F									
7054	Forage condition unsatisfactory, currently producing only 42% of estimated potential. Continual spring grazing.	A1, Cw/7058								350	
7058	Forage condition unsatisfactory, currently producing only 26% of estimated potential. Continual spring grazing. Livestock distribution problems.	A1, B, Cw/7054							300	300	
7064	Forage condition satisfactory currently producing 82% of estimated potential.	Cw/7065, D									

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7065	Forage condition satisfactory, currently producing 94% of estimated potential. Livestock distribution patterns poor.	Cw/7064, D	1								
7073	Forage condition satisfactory, currently producing 90% of estimated potential. Minor livestock distribution problems.	F	1								
7079	Forage condition unsatisfactory, currently producing only 37% of estimated potential. Continual spring grazing.	A1									
7080	Forage condition unsatisfactory, currently producing only 37% of estimated potential. Higher than normal soil erosion is occurring on portions of the allotment. Continual spring grazing. Watershed conditions unsatisfactory. Critical big game winter habitat is in fair condition.	A1, 3, 4	4	2						800	
7081	Forage condition unsatisfactory, currently producing only 39% of estimated potential. Continual spring grazing. Higher than normal soil erosion.	A1, B, Cw/7082	1	1					300	600	
7082	Forage condition unsatisfactory, currently producing only 39% of estimated potential. Continual spring grazing. Higher than normal soil erosion. Excessive dense stands of big sagebrush occupy major portions of allotment.	A1, B, Cw/7081		1					600	600	

APPENDIX 4

MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7084	Forage condition unsatisfactory, currently producing only 53% of estimated potential. Higher than normal soil erosion. Big game winter habitat in poor condition.	A1, 3, 4		1						500	
7087	Forage condition unsatisfactory, currently producing only 38% of estimated potential. Excessive dense stands of big sagebrush occupy major portions of allotment.	A1, Cw/7164							300	300	
7093	Forage condition unsatisfactory, currently producing only 50% of estimated potential. Continual spring grazing. Livestock distribution patterns poor. Soil erosion above normal.	A1, 4, B	2	2	1		2		500	1,000	
7096	Forage condition unsatisfactory, currently producing only 54% of estimated potential. Continual spring grazing. Conflicts for available forage between livestock & wildlife. Livestock distribution patterns poor. Excessive dense stands of big sagebrush occupy major portions of allotment.	A1, 3, B	7	1	1	1	1		800	1,000	500
7100	Forage condition unsatisfactory, currently producing only 36% of estimated potential. Livestock distribution patterns poor.	A, D		1						200	
7103	Forage condition unsatisfactory, currently producing only 58% of estimated potential. Continual spring grazing.	A1, Cw/7105		1						500	

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7105	Forage condition unsatisfactory, currently producing only 61% of estimated potential. Continual spring grazing. Riparian habitat in Manville Draw in poor condition. Soil erosion occurring on portions of allotment.	A1, 2, 4 Cw/7103		1	1	1	1			500	
7107	Forage condition unsatisfactory, currently producing only 38% of estimated potential. Lower foothill areas of allotment is critical big game winter habitat and is in poor condition. Livestock distribution patterns are poor.	A3	1	1					300	300	
7110	Forage condition unsatisfactory, currently producing only 60% of estimated potential. Critical waterfowl habitat area. Continual spring grazing. Livestock distribution patterns poor. Above normal soil erosion occurring.	A1, 2, 4, B	1						500	500	
7116	Forage condition satisfactory, currently producing 93% of estimated potential. Overall management situation adequate.	F									
7119	Forage condition unsatisfactory, currently producng only 38% of estimated potential. Livestock distribution patterns poor. Critical winter habitat for antelope is in poor to fair condition.	A1, 3		1						1,000	
7120	Forage condition unsatisfactory, currently producing only 24% of estimated potential.	A1, B		2					500	500	

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7120 (CONT.)	Continual spring grazing. Livestock distribution patterns poor.										
7133	Forage condition unsatisfactory, currently producing only 44% of estimated potential. Continual spring grazing. Livestock distribution patterns poor.	A1, B, Cw/7187	2	1					600	600	
7136	Forage condition unsatisfactory, currently producing only 35% of estimated potential. Continual spring grazing. Soil erosion occurring on portions of allotment.	A1, 4, B, Cw/7135	2			1			500	500	
7139	Forage condition unsatisfactory, currently producing only 35% of estimated potential. Livestock distribution patterns poor. Excesssive dense stands of big sagebrush occupy portions of allotment.	A1, Cw/7141, 7142, 7143, 7144			1		2			250	
7141	Forage condition unsatisfactory, currently producing onl 49% of estimated potential. Continual spring grazing.	A1, Cw/7139, 7142, 7143, 7144									
7142	Forage condition unsatisfactory, curently producing only 65% of estimated potential. Conflict for available forage between big game and livestock. Big game critical winter habitat in poor condition.	A3, Cw/7139, 7141, 7143, 7144				1				250	
7143.	Forage condition unsatisfactory, currently producing only 28% of estimated potential. Soil erosion occurring on major portions of	A1, 4, B, Cw/7139, 7141, 7142, 7144			1		1		300	300	

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7143 (CONT.)	allotment. Continual spring grazing.										
7144	Forage condition unsatisfactory, currently producing only 49% of estimated potential.	A, Cw/7139, 7141, 7142, 7143									
7151	Forage condition unsatisfactory, currently producing only 59% of estimated potential. Continual spring grazing. Soil erosion occurring on portions of allotment.	A1, 4, Cw/7155									400
7155	Forage condition unsatisfactory, currently producing only 57% of estimated potential. Continual spring grazing.	A1, Cw/7151									100
7164	Forage condition unsatisfactory, currently producing only 72% of estimated potential.	A, Cw/7087			1						300
7172	Forage condition satisfactory, currently producing 94% of estimated potential. Overall management situation adequate.	F									
7175	Forage condition satisfactory, currently producing 93% of estimated potential. Overall management situation adequate.	F									
7187	Forage condition unsatisfactory, currently producing 69% of estimated potential. Continual spring grazing. Livestock distribution patterns poor.	A1, B, Cw/7133		1					500	500	

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7189	Forage condition unsatisfactory, currently producing only 49% of estimated potential. Continual spring grazing. Riparian habitat along Big Creek in poor condition. Conflict for available forage between big game and livestock.	A1, 2, 3	2								
7191	Forage condition very unsatisfactory, currently producing only 15% of estimated potential. Riparian habitat along Mansfield Draw in poor condition. Soil erosion occurring on major portions of allotment. Continual spring grazing. Excessive dense stands of big sagebrush occupy portions of allotment.	A1, 2, 4		2					500	500	
7192	Forage condition unsatisfactory, currently producing 71% of estimated potential. Livestock distribution patterns poor. Continual spring grazing.	A1		1							
7250	Forage condition unsatisfactory, currently producing 51% of estimated potential.	D, E		2							1,000
7252	Forage condition unsatisfactory, currently producing only 31% of estimated potential.	D, E									
7253	Forage condition unsatisfactory, currently producing only 28% of estimated potential. Livestock distribution patterns poor. Riparian habitats along Slough Creek and Grace Creek in fair condition. Continual spring grazing. Soil erosion occurring on portions of allotment.	A1, 2, 4, D		2							1,000

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7254	Forage condition unsatisfactory, currently producing 56% of estimated potential. Continual spring grazing. Livestock distribution patterns poor. Riparian habitat along Shell Creek in fair condition.	A1, 2	2			1					
7255	Forage condition unsatisfactory, currently producing 55% of estimated potential. Continual spring grazing. Excessive dense stands of big sagebrush occupy portions of allotment.	A1, B				1			300		400
7256	Forage condition unsatisfactory, currently producing 33% of estimated potential. Livestock distribution patterns poor. Continual spring grazing. Excessive dense stands of big sagebrush occupy portions of allotment. North portion of allotment is critical of big game winter habitat and is in fair condition.	A1, 3, B, D	1		1	2	1		200	450	
7258	Forage condition unsatisfactory, currently producing 56% of estimated potential. Continual spring grazing. Excessive dense stands of big sagebrush occupy portions of allotments. Livetock distribution patterns poor. Soil erosion above normal.	A1, 4, D	2	1						400	
7500	Forage condition unsatisfactory, currently producing 44% of estimated potential. Riparian vegetation along Jensen Creek and Corral Creek is in fair condition but with a static to	A2, B, Cw/7534	2	2				.5	75	120	75

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7500 (CONT.)	declining trend. Continuous spring use on lower ranges and poor livestock distribution due to lack of adequate water on upland range sites.										
7501	Forage condition satisfactory, currently producing 75% of estimated potential. Lack of adequate water on the north end of west pasture.	A1	1			1					
7503	Forage condition unsatisfactory, currently producing 39% of estimated potential. Continuous spring grazing.	A1, Cw/7506						.5			
7505	Forage condition satisfactory, currently producing 77% of estimated potential. Continuous spring grazing on lower ranges with inadequate water on underutilized upper ranges. Western portion of the allotment is a sensitive watershed area. South and west portions of the allotment provide critical deer and elk winter range consisting of decadent, overmature sagebrush.	A3, 4, B	2.5	2				.5	260	460	60
7506	Forage condition unsatisfactory, currently producing 71% of estimated potential. Entire allotment provides critical big game winter range and has been identified as a sensitive watershed area. All existing water sources have been developed but more are needed on the upland sites to relieve grazing pressure in Hay Gulch and Pickering Gulch. Excessive gully	A2, 3, 4, B, Cw/7503	3.5	2	1		2	2	550	930	265

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7506 (CONT.)	erosion is evident along many of the tributaries that service Hay Gulch and Pickering Gulch.										
7507	Forage condition unsatisfactory, currently producing 57% of estimated potential. A number of aspen stands receive heavy grazing pressure as they provide the majority of water sources on the allotment.	A1, 2, B	2.5	2		1			185	375	80
7510	Forage condition unsatisfactory, currently producing 53% of estimated potential. Ute Bill Creek is an important riparian stream system presently in fair condition with a static trend.	A2, B	2	1					110		110
7511	Forage condition unsatisfactory, currently producing 39% of estimated potential. The allotment consists of extremely steep topography and, consequently the livestock tend to concentrate in the principal drainage of Drowsy Water Creek. The riparian vegetation is in fair condition with a stable trend. Some localized watershed damage has occurred on the steeper slopes due to trail horse use by a local dude ranch.	A2, Cw/7589				1			60	210	60
7523	Small, consolidated grazing allotment.	Cw/7527									
7527	Forage condition unsatisfactory, currently producing 61% of estimated potential. The allotment contains three major riparian stream	A, B, Cw/7523	3			1			145		145

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7527 (CONT.)	systems (Kinney, McQuery and Sheriff Creeks) all in good condition. Livestock currently utilize many forest clear cut areas, but overall livestock distribution is poor due to a steep, highly dissected topography.										
7534	Forage condition satisfactory, currently producing 80% of estimated potential. Good overall livestock distribution except upland ranges are underutilized due to lack of water.	B, Cw/7500		1	1		1			190	
7537	Forage condition unsatisfactory, currently producing 56% of estimated potential. Allotment is well watered except for the western side. Provides critical winter big game range but much of the browse (sagebrush) overstory is decadent. High sage spring riparian zone is in poor condition.	A1, 2, 3, D		1			1		415	110	385
7540	Forage condition unsatisfactory, currently producing 54% of estimated potential. Allotment is dominated by thick decadent sagebrush, and rabbitbrush yet provides extremely critical winter big game range.	A1, 3, B, C, Cw/7765	1.5							120	
7541	Forage condition satisfactory, currently producing 84% of estimated potential. Allotment is adequately watered in all three existing pastures. Many drainages contain over mature sagebrush. Antelope Creek riparian habitat is in fair condition with static to improving trend.	A2, B, D		1					180	250	90

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ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7542	Forage condition unsatisfactory, currently producing 53% of estimated potential. Grazing distribution is extremely poor with heavy grazing use in the drainages and little use on the upland sites due to lack of water.	A1, B, Cw/7767		1					130	215	60
7545	Allotment consists of small, unconsolidated blocks of public land mixed with private land.	Cw/7783		1						255	
7550	Forage condition satisfactory, currently producing 78% of estimated potential. Allotment provides extremely critical big game winter range and is sensitive watershed area. The Muddy Creek riparian zone is in fair condition.	A2, 3, 4	1.5	1						360	
7551	Forage condition unsatisfactory, currently producing 49% of estimated potential. Some clearcut forests areas receive heavy utilization. Fifteen acres in the allotment contains heavy concentrations of larkspur each spring and the area has been identified for treatment/exclosure from livestock use.	A1	1			1					
7552	Forage condition unsatisfactory, currently producing 44% of estimated potential. Upland ranges lack adequate water and are underutilized by livestock.	A1, B, Cw/7557		1						270	
7553	Forage condition satisfactory, currently producing 75% of estimated potential. Overall grazing distribution is good. Barger Gulch	A1, 2, Cw/7769, F								250	

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7553 (CONT.)	riparian vegetation is in fair condition.										
7555	Forage condition unsatisfactory, currently producing 25% of estimated potential. Approximately 75% of the allotment is unsuitable for livestock use due to steep, rough, topography. Extremely critical big game winter habitat.	A3,									
7560	Forage condition satisfactory, currently producing 81% of estimated potential. Extremely critical big game winter range. Lower ranges of allotment is dominated by thick, decadent, sagebrush. Upper ranges lack adequate water.	A1, 3, B		1	1				450	550	
7562	Forage condition satisfactory, currently producing 86% of estimated potential. Good grazing distribution. Over mature pinyon-juniper stand inhibiting forage production in north end of allotment.	F		1							120
7565	Forage condition unsatisfactory, currently producing 60% of estimated potential. Livestock distribution is limited by extremely steep topography. Heavy livestock utilization in aspen stands where water is available. Riparian habitat along Troublesome Creek is in fair condition with improving trend.	A1, 2, D		1							300
7568	Forage condition satisfactory, currently producing 77% of estimated potential. The	A3, 4, E									

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7568 (CONT.)	allotment provides critical big game habitat and is a sensitive watershed area. The current AMP is working well but needs some modification. Many of the drainages and upland hills remain occupied by dense stands of sagebrush that have limited livestock forage production.										
7569	Forage condition unsatisfactory, currently producing 32% of estimated potential. Critical big game winter range and sensitive watershed area. Continuous spring grazing. Dense stands of overmature sagebrush occupy large portions of the allotment.	A1, 3, 4, B, Cw/7587						.5	200	300	120
7574	Forage condition unsatisfactory, currently producing 53% of estimated potential. Allotment provides critical big game winter range. The upland mesa is dominated by dense stands of sagebrush. Water developments and grazing distribution patterns are adequate.	A1, 3, B							140	200	250
7579	Forage condition satisfactory, currently producing 93% of estimated potential. Smith Creek riparian zone is in fair condition. A number of aspen stands receive heavy livestock grazing use due to abundance of water in these areas.	A2	4								
7580	Forage condition satisfactory, currently producing 86% of estimated potential. Grazing distribution problems and livestock harassment	A1, D	3	1							

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7580 (CONT.)	are encountered as an unfenced home subdivision is in the middle of the allotment. Livestock use of the allotment is limited by steep topography and extensive stands of lodgepole pine.										
7585	Forage condition satisfactory, currently producing 75% of estimated potential. Lack of adequate water on upper-most range sites.	B, F				1				120	100
7588	Forage condition satisfactory, currently producing 77% of estimated potential. Rabbit Ears Creek riparian zone is in good condition. Some aspen sites receive heavy livestock grazing use.	A1								350	300
7589	Small, consolidated allotment.	Cw/7511									
7754	Forage condition unsatisfactory, currently producing 71% of estimated potential. Continuous early spring grazing. Much of the allotment is dominated by dense stands of decadent sagebrush.	A1, B								100	200
7765	Forage condition unsatisfactory, currently producing 43% of estimated potential. Small, consolidated allotment. Extremely critical big game winter range.	A1, 3, Cw/7540							300	200	100
7766	Forage condition unsatisfactory, currently producing 43 % of estimated potential. Continual early spring grazing. The allotment	A1, 4, B							350	880	

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MANAGEMENT OBJECTIVES/OPPORTUNITIES - LEVEL 1 & 2 ALLOTMENTS

ALLOT NO.	RESOURCE CONFLICT/PROBLEMS	MANAGEMENT OBJECTIVES/ OPPORTUNITIES	PROPOSED RANGE IMPROVEMENTS								
			FENCES (MI)	RESV (NO)	WELLS (NO)	SPRINGS (NO)	PIPE LINE (MI)	DITCH (MI)	RESEED (AC)	VEG. MECH & CHEM. (AC)	MANIP. PRES. BURN (AC)
7766 (CONT.)	is dominated by extensive stands of sagebrush and low rabbitbrush. Sensitive watershed area.										
7767	Forage condition unsatisfactory, currently producing 62% of estimated potential. Small, consolidated allotment.	A1, Cw/7542									
7769	Small, consolidated allotment.	Cw/7553									
7783	Small, consolidated allotment.	Cw/7545								385	

APPENDIX 5

THE "NO GRAZING" ALTERNATIVE

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THE "NO GRAZING" ALTERNATIVE

The "No Grazing" alternative would require the elimination of livestock grazing from all public land in the resource area. Livestock grazing would be phased out on 356,260 acres of public land over a five year period.

The objectives would be to allow wildlife populations to reach a balance with available vegetation production without the influence of livestock grazing and to reserve all remaining vegetation for watershed protection and enhancement of visual and recreation resources.

Vegetation Allocation and Monitoring

All vegetation would be allocated to wildlife and to the enhancement of resources other than livestock grazing.

Vegetation allocation under this alternative would yield 14,898 AUM's for Rocky Mountain elk, 17,907 AUM's for mule deer, 1,563 AUM's for pronghorn antelope and 31,305 AUM's of excess livestock vegetation allocated to watershed protection and other resources.

The allocation to big game wildlife would provide vegetation for increased populations above the 1980 population estimates, as well as above the Colorado Division of Wildlife long range goals of:

--300 percent increase in mule deer in North Park

--75 percent increase in mule deer in Middle Park

--Rocky Mtn. elk remain the same

--Pronghorn antelope remain the same

Source: 1980 Populations Estimates (Stategic Plan)

In addition to the allocation of forage, habitat condition studies would be implemented to monitor use under this alternative. Data from habitat studies would be used to identify habitat degradation and to make recommendations for reductions in wildlife or adjustments in management strategy.

Grazing Management

Approximately 72 percent of the existing grazing allotments contain public land that is intermingled with private land and would require extensive additional fencing to prevent movement of livestock to public land. An estimated 1,650 miles of fence would have to be constructed by adjacent land owners and BLM would have no control over the design of the privately-owned fences on State or private lands.

No new range improvements would be constructed, nor would existing range improvements be maintained for the benefit of livestock grazing. However, construction of new or maintenance of existing range improvements could be undertaken to benefit resource uses other than livestock grazing. Livestock operators with investments in range improvements on public land would be entitled to appropriate project salvage rights (Public Law 94-579).

Livestock trailing across public land would continue to be authorized on a case-by-case basis.

Costs of Implementation

Elimination of livestock grazing from public lands within the RMP/EIS area would incur costs for both BLM and the livestock operators. An undetermined cost for payment of salvage rights for some range improvements which livestock operators have on public land would be incurred by BLM.

The largest cost associated with this alternative would be the construction of trespass control fences. Construction of fences could require an estimated investment of up to $5,775,000 (materials and labor) by livestock operators if all 1,650 miles of fence were constructed.

IMPACTS OF THE "NO GRAZING" ALTERNATIVE

This section examines the impacts of eliminating livestock grazing from public lands in the Kremmling RMP/EIS area. It is expected that the "No Grazing" alternative would take a minimum of five years to fully implement because of the extensive private fencing involved. Therefore, the impacts discussed are generally considered to be long term (5 to 20 years).

Resource Impacts

Impacts on Soil, Water and Air

Beneficial impacts to soil, water and air quality are expected as livestock are reduced/eliminated from public rangelands. As more vegetation is established and plant vigor/cover increases, soil profiles will retain higher moisture holding capacities and nutrients as a result of additional deposit of organic matter. Soil productivity structure and permeability would improve and a reduction in on-site erosion rates would occur over the long term.

Favorable impacts on hydrologic processes affecting water quality and quantity would also be expected in the RMP/EIS area. Precipitation would be detained longer by improved plant cover and infiltration rates may slowly increase over the long term. Overland flow velocities and qualities would be reduced as would storm runoff volumes during peak discharge. Stream course channel stability would improve as scour and bank erosion are decreased in frequency and magnitude. Most important, sediment discharges should decrease with the increasing establishment of vegetation cover and corresponding soil development.

Elimination of grazing would be expected to result in the maintenance of existing air quality on the open rangelands.

Impacts on Terrestrial Vegetation

Elimination of livestock grazing is expected to increase the overall rate of recovery of rangeland over any other alternative.

On a number of grazing allotments, overstocking and/or continuous spring use has left some rangelands dissected by gullies. Vesicular soil surface crusts have also formed which reduce site potential by inhibiting plant seeding survival. These cumulative impacts have contributed to increased aridity by reducing vegetation productivity on as much as one fifth of the Resource Area. These areas may require periods of 20-50 years before productivity could be restored to a level within at least 75 percent of site potential (satisfactory range conditions). Some of these areas may require a type of land treatment before site potential and productivity could be restored. However, the majority (four fifths) of the Resource Area rangelands would be expected to respond at a faster rate.

Over the next 20 years, elimination of livestock grazing would be expected to increase range condition from unsatisfactory (poor and fair) to satisfactory (good and excellent) condition by four times the present 70,339 acres.

Over the long term, the standing crop of available forage and species composition would be expected to be higher than under other alternatives. However, research has documented that *annual* production may be lower as grazing plants tend to produce more than ungrazed ones. Increases of mulch or dead plant materials are expected to show a dramatic, though unquantifiable, increase since plant materials normally consumed by livestock would be left to accumulate.

Impacts on Wildlife (Terrestrial, Aquatic and Riparian Habitat)

The elimination of livestock grazing would affect deer, elk and antelope in two basic ways: (1) potential short term changes in forage availability, and (2) short and long term habitat changes resulting from plant successional trends released from the influence of livestock grazing.

In the short term, ungulates may benefit from increased forage availability. Long term changes would be expected in the vegetation structure and plant diversity of the various wildlife habitats.

It is uncertain what the short and long term carrying capacities of deer, elk and antelope would be under this alternative, or how long it would take population expansions and/or declines with habitat productivity to reach an ecological equilibrium. Regardless, the overall condition of critical winter ranges would be expected to improve over the long term with the removal of livetock.

There is a potentially significant adverse impact that may affect big game populations as livestock would be removed from public ranges. The private fencing of 1,650 miles of boundary fence would not have to meet Bureau specifications that allow for the passage of big game species. Unregulated fencing could substantially inhibit the migration of deer and antelope herds; particularly across critical winter ranges.

The effects of eliminating livestock from public ranges on sage grouse and other birds/small mammals is unknown.

Aquatic and riparian habitat would be expected to impove substantially and within 5-7 years after livestock are removed. Improved riparian vegetation cover/diversity, increased streambank stability and reduced stream siltation are all expected benefits. Water quality would also improve; providing direct benefits to fish and all other wildlife that depend on these critical perennial/intermittent stream systems.

Impacts On Threatended and Endangered Plant/Animal Species

The effects of removing livestock from public range on threatened and endangered plant or animal species is unknown. Not enough information is available concerning the population biology of these species. It is known, however, that the only Federally-listed Endangered plant in the Resource Area *Phacelia formosula* (scorpion plant) presently has surviving populations in both grazed and ungrazed areas.

Impacts on Cultural Resources

No significant impacts from removing livestock would be expected. The absence of livestock movement may positively impact cultural resources by decreasing site erosion, rubbing and artifact breakage. However, the intensified human activity in the area, as a result of an anticipated increase in wildlife, would cause an increase in vandalism upon cultural sites.

Impacts on Recreation Resources

Over the long term, it is expected that this alternative could result in up to a 25 percent increase in big game hunter/viewing recreational days. However, the feasibility of reaching this level or impacts from such an increase are unrealistic to evaluate at present.

Also, under this alternative, adverse impacts to visual resources may result as extensive fencing is completed to exclude livestock from public lands.

Economic and Social Impacts

The Kremmling Resource Area manages 145 grazing permits; accounting for a total, in 1980, of 5.3 percent of all AUM's in the Resource Area (45,648:866,400).

In the preceding decade, the total ranch land acreage has declined, while the number of ranches has increased; indicating a trend toward smaller ranches. The proportionate importance of BLM permits has thus increased from 4.6 percent of all AUM's in 1971.

All four of the largest ranches hold permits; about 60 percent of the smaller ranches do.

Table 1 (Table 3-9 of Kremmling RMP) shows that 75 percent (109 of 145) of the BLM permittees depend upon BLM lands for 10 percent or less of their forage needs, and none use BLM lands for more than 40 percent of their needs. Yet, as Table 2 (RMP Table 3-10) indicates, 108 (74 percent) of these permits are of medium or high criticality to their holders. This apparent discrepancy is because for most permit holders, BLM forage, though limited, is used during those critical times of year when no other forage is available (such as in the spring when USFS permit lands in the high country are not yet open, but the stock must be moved out of the privately-owned valley bottoms so that hay crops can be started). The loss of critical spring pasture, particularly BLM pasture, that has been annually rented at rates well under fair market value, could be potentially devastating to the economic stability of many ranches.

Should a "no grazing" alternative be implemented, Table 2 shows that up to 74 percent of the permit holders would have to cut operations drastically or could even be forced out of business. In the worst cases, since about 60 percent of the ranchers in the Resource Area have grazing permits, this would mean a loss of about 45 percent - almost half- of the ranching operations in the two counties.

Many of the ranches that would go out of business may be purchased and consolidated with existing corporate ranches; potentially recovering some of the expected revenue loss. However, a substantial portion of the total ranch revenue in the two counties would be lost over the long term (5 years after termination of the grazing permits/leases).

Also lost would be a way of living, traditional to the high country of Colorado.

The political and social life of Jackson County and western Grand County for generations has been oriented strongly to a ranching way of life, and the ranching ethos has long been the dominant political and social influence in this isolated high country. Kremmling and Walden have been and still are ranching centers above all; in spite of more recent growth and change, due to energy, lumbering and tourism. Families living on outlying ranches are well integrated into the fabric of both Kremmling and Walden social-structurally and through informal social interaction and support networks.

The loss of such a high proportion of ranchers would thus cause drastic social changes by destroying much of the social structure patterning of north and western Middle Parks; disrupting most of the familiar social networks and bringing chaotic change to the still-strong traditional value system.

It is difficult to imagine another action BLM could take that would be as unpopular or as likely to affect the local social system as dramatically or negatively as would withdrawal of grazing permits; apart from and additionally to general economic

consequences for the area and the specific economic losses to individual ranching families.

TABLE 1 -- OPERATOR DEPENDENCY ON BLM GRAZING PERMITS/LEASES

PERCENT FEDERAL FORAGE

Dependency (%)	Percent of Operators	Number of Operators on BLM
0-10	75%	109
11-20	16%	23
21-30	6%	9
31-40	3%	4
41-50	0%	0
51-60	0%	0
61-70	0%	0
71-80	0%	0
81-90	0%	0
91-100	0%	0
TOTAL	.....	145

Source: Kremmling Resource Area RMP 1982 (Table 3-9).

TABLE 2 -- CRITICALITY OF OPERATOR DEPENDENCY ON BLM GRAZING PERMITS/LEASES

Criticality	Number of Operators	Percent of Total
High	44	30
Medium	64	44
Low	3 7	2 6
TOTAL	145	100

NOTE: High means that BLM forage is judged to be an essential element for the survival of the ranching operation. Medium means that BLM forage use may or may not be an essential survival element. Low means that BLM forage use is judged not to be essential to the ranching operation survival.

BLM data and estimate, U.S. Department of Interior, Bureau of Land Management, Kremmling, Colorado.

Source: Kremmling Resource Area RMP 1980 (Table 3-10).

APPENDIX 6

WILDERNESS STUDY POLICY
AND
PLANNING CRITERIA

APPENDIX 6
WILDERNESS STUDY POLICY AND PLANNING CRITERIA

The primary goal of the BLM wilderness study process is to recommend for wilderness designation those areas for which it has been determined, through the multiple resource planning process and public involvement, that wilderness is the most appropriate alternative use of the land and its resources. The two planning criteria and six quality standards described below will be used in making the analysis on which that determination will be based. These criteria and quality standards will be applied to BLM wilderness study areas (WSAs) through the BLM planning process, and each criterion and quality standard will be fully considered and documented in determining whether a WSA is more suitable for wilderness or for other uses and in making all BLM wilderness recommendations--both "suitable for preservation as wilderness" and "nonsuitable".

Criterion No. 1. Evaluation of Wilderness Values

Consider the extent to which each of the following components contributes to the overall value of an area for wilderness purposes.

a. Mandatory wilderness characteristics: The quality of the area's wilderness characteristics--size, naturalness, and outstanding opportunities for solitude or primitive recreation

b. Special features: The presence or absence, and the quality of the optional wilderness characteristics--ecological, geological, or other features of scientific, educational, scenic, or historical value

c. Multiple resource benefits: The benefits to other multiple resource values and uses which only wilderness designation could ensure

d. Diversity in the National Wilderness Preservation System: The extent to which wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of each of the factors listed below:

(1) Expanding the diversity of natural systems and features, as represented by ecosystems and landforms

(2) Assessing the opportunities for solitude or primitive recreation within a day's driving time (5 hours) of major population centers

(3) Balancing the geographic distribution of wilderness

The analysis should consider--in separate categories--Federal and state lands designated as wilderness, areas officially recommended for wilderness, and other Federal and state lands under wilderness study (the state lands referred to here are those involved in state governments' wilderness programs).

Criterion No. 2. Manageability

The area must be capable of being effectively managed to preserve its wilderness character.

Quality Standard No. 1. Energy and Mineral Resource Values

Recommendations as to an area's suitability or nonsuitability for wilderness designation will reflect a thorough consideration of any identified or potential energy and mineral resource values.

Quality Standard No. 2. Impacts on Other Resources

Consider the extent to which other resource values or uses of the area would be foregone or adversely affected as a result of wilderness designation.

Quality Standard No. 3. Impact of Nondesignation on Wilderness Values

Consider the alternative use of land under study if the area is not designated as wilderness, and the extent to which wilderness values of the area would be foregone or adversely affected as a result of this use.

Quality Standard No. 4. Public Comment

In determining whether an area is suitable or nonsuitable for wilderness designation, the BLM wilderness study process will consider comments received from interested and affected publics at all levels--local, state, regional, and national. Wilderness recommendations will not be based exclusively on a vote-counting majority rule system. BLM will develop its recommendations by considering public comment in conjunction with its analysis of a wilderness study area's multiple resource and social and economic values and uses.

Quality Standard No. 5. Local Social and Economic Effects

In determining whether an area is suitable or nonsuitable for wilderness designation, BLM will give special attention to adverse or favorable social and economic effects, as identified through the wil-

derness study process, which designation would have on local areas.

Quality Standard No. 6. Consistency with Other Plans

In determining whether an area is suitable or nonsuitable for wilderness designation, BLM recommendation is consistent with officially approved and adopted resource-related plans of other Federal agencies, state and local governments, and Indian tribes (and the policies and programs contained in such plans), as required by FLPMA and the BLM planning regulations.

APPENDIX 7

PROPOSED
OFF-ROAD VEHICLE (ORV)
DESIGNATIONS

APPENDIX 7
PROPOSED OFF-ROAD VEHICLE (ORV) DESIGNATIONS

Proposed designations are shown on the alternative maps that were included in the draft RMP/EIS. Expansion of the proposed designations on Dice Hill are shown in this appendix.

North Park

1. Area: North Sand Hills

All Alternatives except the Natural Environment Alternative

Limitations: Restricted to existing roads and trails and open sand areas

Rationale: Continue existing restrictions in place since 1977. Restrictions are needed to protect cultural resources and the natural processes of the dunes.

Natural Environment Alternative

Limitations: Closed to all motorized use except for administrative purposes

Rationale: Motorized use is inconsistent with Natural Area management, where the emphasis is on protection of cultural resources and the natural dune processes.

2. Area: Hebron Sloughs

Preferred, Renewable Resources, Recreation, and Natural Environment Alternatives

Limitations: Restricted to designated roads and trails; seasonal closure (approximately June 1 to August 1)

Rationale: This area is an important nesting area for waterfowl. The Bureau has undertaken several projects to improve the nesting habitat. The seasonal closure would occur during nesting season.

Middle Park

1. Area: Strawberry

All Alternatives except Continuation of Present Management

Limitations: Seasonal closure - snowmobiles excepted (approximately December 15 to May 1)

Rationale: Poaching and wildlife harassment are problems in this area. In past years, the Colorado Division of Wildlife has requested that the area be closed after hunting season.

2. Area: Windy Gap

All Alternatives except Continuation of Present Management

Limitations: Restricted to designated roads and trails

Rationale: Significant cultural resources have been discovered in these areas. The area has been placed under emergency protective withdrawals.

3. Area: Sulphur Gulch

All Alternatives except Continuation of Present Management and Energy and Minerals

Limitations: Restricted to designated roads and trails; seasonal closure of the Black Mountain Road - snowmobiles excepted (approximately December 15 to May 1)

Rationale: Critical big game winter habitat is involved. Loss of vegetation due to ORV's is occurring.

4. Area: Lawson Ridge

All Alternatives except Continuation of Present Management

Limitations: Restricted to existing roads and trails

Rationale: Critical big game winter habitat is involved. Loss of vegetation due to ORV's is occurring. Disruption of livestock grazing and vandalism during hunting season also occur.

5. Area: Resource Conservation Area

All Alternatives except Continuation of Present Management

Limitations: Restricted to designated roads and trails

Rationale: Critical big game winter habitat is involved. Loss of vegetation due to ORV's is occurring. This area receives the most recreational ORV use because of its proximity to Kremmling. Numerous trails crisscross the area.

Note: Separate public meetings on this designation and a site-specific plan may be necessary after completion of the RMP due to anticipated intense public interest in designations on the "ORV playground" in Kremmling's backyard.

6. Area: Troublesome WSA

Natural Environment Alternative only

Limitations: Closed to all motorized use except as allowed by the Bureau's Wilderness Management Policy

Rationale: Under this alternative, the Troublesome WSA would be recommended as suitable for wilderness designation. Motorized vehicles are prohibited in wilderness areas except in certain circumstances outlined in the Wilderness Management Policy.

7. Area: Dice Hill

All Alternatives except Continuation of Present Management

Limitations: Restricted to designated roads and trails

Rationale: The Dice Hill area has become extremely heavily used during the big game hunting seasons over the past several years. This tract of public land is relatively small, some 6,000 acres, is readily accessible from an improved BLM road and is bounded on three sides by public land. Two tracts of private land lie within the boundaries of the Dice Hill area. (See figure A4-1)

ORV use of Dice Hill during the big game hunting seasons has also greatly increased. Numerous roads and trails have been created by unrestricted four wheel drive vehicle and motorcycle cross country travel. This travel has resulted in serious resource damage primarily to meadow vegetation and wildlife habitat. Hunting opportunities have diminished on Dice Hill due to ORV travel as deer and elk flee to protected private lands.

Numerous trespass complaints have been received from adjacent private property owners. The increase in ORV travel has made private property readily assessible from public lands on Dice Hill. Numerous complaints have been received from these land owners regarding ORV users from Dice Hill destroying private property and wantonly trespassing.

8. Area: Inspiration Point Flats

All Alternatives

Limitations: Road leading from the bench to the Colorado River is restricted to 4-WD vehicles only.

Rationale: This is a rough road which experience has shown not to be suitable for regular passenger-type vehicles. In past years, sedans have been stuck on the road and required towing. The road is currently signed for 4-WD's only.

APPENDIX 8

RECREATION OPPORTUNITY SPECTRUM (ROS) CLASSES

APPENDIX 8
RECREATION OPPORTUNITY SPECTRUM (ROS) CLASSES

Table A5-1 describes each of the six ROS classes in terms of (1) experience opportunities, (2) setting opportunities, and (3) activity opportunities. These descriptors provide a general overview of the opportunities included in each class. These overview statements do not describe each class in detail but rather provide a point of departure from which the planner or manager can develop more precise prescriptions for each class based on specific situations encountered in field operations. The listing of activity opportunities is provided for illustrative purposes. It is not an all-inclusive list of activity opportunities on the public lands.

TABLE A8-1 -- RECREATION OPPORTUNITY SPECTRUM CLASS DECRIPTIONS

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity
Primitive	Opportunity for isolation from the sights and sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills.	Area is characterized by essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Only facilities essential for resource protection are used. No facilities for comfort or convenience of the user are provided. Spacing of groups is informal and dispersed to minimize contacts between groups. Motorized use within the area is not permitted.	Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl) ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing, and river running (non-motorized craft).
Semi-Primitive Non-motorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, is often evidence of other area users is present. On-site controls and restrictions may be present but are subtle. Facilities are provided only for the protection of resource values and the safety of users. Formal spacing of groups may be made to disperse use and limit contacts between groups. Motorized use is not permitted.	Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing, and river running (non-motorized craft).
Semi-Primitive Motorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Explicit opportunity to use motorized equipment while in the area.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but often there is evidence of other area users present. On-site controls and restrictions may be present, but are subtle. Facilities are provided for the protection of resource values and safety of users only. Formal spacing of groups may be made to disperse use and limit contacts between groups. Motorized use is permitted.	Same as the above, plus the following: off-road vehicle use, four-wheel drive, dune buggy, dirt bike, snowmobile, power boating.

TABLE A8-1 -- RECREATION OPPORTUNITY SPECTRUM CLASS DECRIPTIONS—Continued

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity
Roaded Natural	About equal opportunities for affiliation with other user groups and for isolation from sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. Practice of outdoor skills may be important. Opportunities for both motorized and non-motorized recreation are present.	Area is charcterized by a generally natural environment with moderate evidence of the sights and sounds of man. Resource modification and use practices are evident but harmonize with the natural environment. Concentration of users is low to moderate with facilities sometimes provided for group activity. On-site controls and restrictions offer a sense of security. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities.	All activities listed previously plus the following: picnicking, rock collecting, wood gathering, auto touring, downhill skiing, snowplay, ice skating, water skiing and other water sports, hang gliding, interpretive use, rustic resorts and organized camps.
Semi-Urban (also called Rural)	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges. Risk taking and testing of outdoor skills are unimportant, except in those activities involving challenge and risk.	Area is characterized by substantially modified natural environment. Resource modification and use practices are obvious. Signs and sounds of man are readily evident and the concentration of users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for specific activities. Developed sites, roads and trails are designed for moderate to high use. Moderate densities are provided far away from developed sites. Facilities for intensive motorized use are available.	All activities used previously plus the following: competitive games, spectator sports, bicycling, jogging, outdoor concerts, and modern resorts.
Urban	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment and the use of outdoor skills are largely unimportant.	Area is characterized by a highly modified environment, although the background may have natural elements. Vegetation is often exotic and manicured. Soil may be protected by surfacing. Sights and sounds of man, on-site, predominate. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of a large number of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.	All activities listed previously.

APPENDIX 9

OWNERSHIP CONSOLIDATION: DELETIONS FROM DRAFT RMP/EIS DISPOSAL AREAS

APPENDIX 9
OWNERSHIP CONSOLIDATION:
DELETIONS FROM DRAFT RMP/EIS DISPOSAL AREAS

The following parcels (2,718 acres) are deleted from Disposal Catagorizations due to their location within a Known Recoverable Coal Resource Area (KRCRA), or Public Water Reserve (PWR):

T9N, R79W,	Sec. 9, S1/2S1/2	160 Acres KRCRA
	Sec. 29, S1/2SW1/4NW1/4	20 Acres KRCRA
	Sec. 30, S1/2SE1/4NE1/4	20 Acres KRCRA
	Sec. 30, NE1/4SW1/4	40 Acres KRCRA
T9N, R80W,	Sec. 32, SW1/4NW1/4	40 Acres KRCRA
T8N, R77W,	Sec. 19, Lot 3, NE1/4SW1/4	78.63 Acres KRCRA
T8N, R78W,	Sec. 20, NE1/4NE1/4	40 Acres KRCRA
	Sec. 31, SE1/4NE1/4	40 Acres KRCRA
T7N, R81W,	Sec. 3, N1/2NE1/4, SW1/4NE1/4	120 Acres KRCRA, PWR
T8N, R81W,	Sec. 34, S1/2SE1/4, NW1/4SE1/4, NE1/4SW1/4.	160 Acres KRCRA, PWR
	Sec. 35, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4.	160 Acres KRCRA, PWR
	Sec. 35, NE1/4NE1/4	40 Acres KRCRA
T8N, R82W,	Sec. 23, SW1/4SW1/4	40 Acres PWR
	Sec. 25, SE1/4SW1/4, SW1/4SE1/4	80 Acres KRCRA
	Sec. 35, E1/2NE1/4, NE1/4SE1/4	120 Acres KRCRA
T7N, R80W,	Sec. 19, Lots 5, 6, 7 & 8	142.98 Acres KRCRA
	Sec. 34, SW1/4NE1/4	40 Acres KRCRA
T7N, R81W,	Sec. 4, NE1/4SE1/4	40 Acres KRCRA
	Sec. 4, SW1/4NE1/4, SE1/4NW1/4	80 Acres KRCRA
	Sec. 4, SW1/4SW1/4	40 Acres KRCRA
	Sec. 9, SE1/4NE1/4	40 Acres KRCRA
	Sec. 10, E1/2NW1/4, SW1/4NE1/4	120 Acres KRCRA
	Sec. 10, SW1/4NW1/4, N1/2SW1/4, NW1/4SE1/4.	160 Acres KRCRA
	Sec. 11, SW1/4NW1/4	40 Acres KRCRA
	Sec. 27, NE1/4NE1/4	40 Acres KRCRA
	Sec. 29, SE1/4NW1/4	40 Acres KRCRA
	Sec. 32, NW1/4NW1/4	40 Acres KRCRA
T6N, R81W,	Sec. 10, SW1/4SW1/4	40 Acres KRCRA
	Sec. 10, SW1/4SE1/4	40 Acres KRCRA
	Sec. 13, NW1/4NW1/4	40 Acres KRCRA
	Sec. 15, NW1/4SE1/4	40 Acres KRCRA
	Sec. 15, W1/2NW1/4	80 Acres KRCRA
	Sec. 15, W1/2SW1/4	80 Acres KRCRA
	Sec. 17, SE1/4NE1/4	40 Acres KRCRA
T6N, R81W,	Sec. 5, Lots 5, 6, 7 & 8	192.69 Acres KRCRA
	Sec. 7, Lots 5, 6 & 7	139.12 Acres KRCRA
	Sec. 13, Lot 1	43.92 Acres KRCRA
	Sec. 23, NE1/4SE1/4	40 Acres KRCRA

APPENDIX 10

OWNERSHIP CONSOLIDATION: ADDITIONS OR CHANGES FROM DRAFT RMP/EIS DISPOSAL AREAS

APPENDIX 10
OWNERSHIP CONSOLIDATION:
ADDITIONS OR CHANGES FROM DRAFT RMP/EIS DISPOSAL AREAS

PROPOSED PLAN: The following parcels (4582.19 acres), not previously identified, meet the disposal criteria in the Lands and Realty Section/Ownership Consolidation. These parcels have undergone preliminary multiple-resource and impact analysis similar to parcels identified in the Draft RMP/EIS. These parcels are identified as additions or changes to the draft and are not depicted on the Ownership Consolidation-Land Tenure Map. A separate, Site-Specific Land Report/Environmental Assessment will be prepared for each parcel in the event of its disposal.

Changes		
T1N, R76W,	Sec. 17, NE1/4SE1/4	40 acres From Category I to Category II. PWR revoked.
T1N, R76W,	Sec. 17, E1/2NE1/4, SE1/4, E1/2,SW1/4,	
	Sec. 20, NE1/4NW1/4	360 acres
	Sec. 18, NE1/4SE1/4	40 acres From Category I Special Exceptions to Category II. Change to facilitate immediate support and enhancement of recreational and tourism based economy of East Grand County. (400 acres previously included in RMP/EIS acreage tabulations)
Additions		
T12N, R76W,	Sec. 32, E1/2NW1/4	80 acres CII
T11N, R76W,	Sec. 18, Lots 1 & 2	79.73 acres CII
T11N, R79W,	Sec. 14, SW1/4SW1/4,	
	Sec. 15, SE1/4SE1/4,	
	Sec. 22, NE1/4NE1/4	120 acres CII
	Sec. 15, NW1/4, N1/2SW1/4	240 acres CII
	Sec. 20, NW1/4NE1/4,	40 acres CII
T10N, R81W,	Sec. 20, NE1/4SE1/4	40 acres CII
T9N, R77W,	Sec. 19, SW1/4SE1/4	40 acres CII
	Sec. 29, W1/2NW1/4, NW1/4SW1/4,	
	Sec. 30, SE1/4NE1/4, NE1/4SE1/4	200 acres CII
	Sec. 31, E1/2NE1/4,	
	Sec. 32, SW1/4NW1/4	120 acres CII
T8N, R77W,	Sec. 5, NW1/4SW1/4	40 acres CII
T8N, R81W,	Sec. 33, SE1/4SW1/4	40 acres CII
T6N, R79W,	Sec. 7, E1/2NE1/4	80 acres CII
	Sec. 8, SW1/4SW1/4	40 acres CII
	Sec. 21, SW1/4SW1/4	40 acres CII
T6N, R80W,	Sec. 19, Lots 5 & 6	53.76 acres CII
	Sec. 19, Lot 9,	
	Sec. 30, Lot 5	66.79 acres CII
	Sec. 22, SE1/4NE1/4, E1/2SE1/4	120 acres CII
	Sec. 27, NE1/4NW1/4	40 acres CII
T5N, R80W,	Sec. 8, SW1/4SW1/4	40 acres CII
T5N, R81W,	Sec. 21, Lots 1 & 3,	
	Sec. 22, Lot 4	140.69 acres CII
	Sec. 22, Lot 2	46.29 acres CII
T5N, R82W,	Sec. 14, NW1/4SW1/4	40 acres CII
T4N, R81W,	Sec. 29, NW1/4NW1/4	40 acres CI: Special Exceptions (State)
	Sec. 32, NE1/4, W1/2NE1/4, W1/2SE1/4	320 acres CI: Special Exceptions (State)
	Sec. 34, W1/2NW1/4, NW1/4SW1/4	120 acres CI: Special Exceptions (State)
T3N, R76W,	Sec. 22, Lot 10	2.65 acres CII
	Sec. 22, Lot 16	2.65 acres CII
	Sec. 30, Lot 4, SW1/4SE1/4	77.16 acres CII

T3N, R77W,	Sec. 25, S1/2SW1/4, SW1/4SE1/4	120 acres CII
	Sec. 26, NW1/4NE1/4, NW1/4,	
	Sec. 27, E1/2NE1/4, SE1/4SW1/4, E1/2SE1/4SW1/4, N1/2SE1/4, SW1/4SE1/4,.	
	Sec. 34, NE1/4NE1/4NW1/4, S1/2NE1/4NW1/4, N1/2SE1/4NW1/4.	280 acres CII
	Sec. 34, NW1/4SW1/4	40 acres CII
	Sec. 35, SW1/4SE1/4	40 acres CII
T2N, R76W,	Sec. 22, S1/2NE1/4, N1/2SE1/4	
	Sec. 23, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, SE1/4.	560 acres CII
	Sec. 25, W1/2SW1/4	
	Sec. 26, E1/2SE1/4	160 acres CII
T1N, R76W,	Sec. 4, Lots 5, 6, 7, 8 & 9	160.76 acres CII
T1N, R78W,	Sec. 6, SE1/4NE1/4	40 acres CII
T1S, R78W,	Sec. 28, SE1/4SW1/4	40 acres CII
T1S, R80W,	Sec. 13, SE1/4NW1/4	40 acres CII
	Sec. 23, N1/2NW1/4	80 acres CII
	Sec. 26, NE1/4SE1/4	40 acres CII
T1S, R81W,	Sec. 19, SW1/4SE1/4	40 acres CI: Special Exceptions (DOW)
	Sec. 20, Lot 1	33.33 acres CI: Special Exceptions (DOW)
	Sec. 31, Lot 4, SW1/4SW1/4, S1/2NE1/4	161.5 acres CII
T1S, R82W,	Sec. 27, NW1/4SE1/4	40 acres CI: Special Exceptions (DOW)
T2S, R81W,	Sec. 4, SW1/4	
	Sec. 5, Lot 1, SE1/4NE1/4, NE1/4SE1/4	
	Sec. 9, NE1/4NW1/4	320.28 acres CII
T2S, R82W,	Sec. 2, Lot 6	36.6 acres CII

Other alternative disposal additions are depicted on maps available as shelf-documentation at the Kremmling Resource Area Office.

APPENDIX 11

PTARMIGAN SMALL TRACT AREA

APPENDIX 11
PTARMIGAN SMALL TRACT AREA

Ptarmigan Small Tract Area: Identified for disposal as "Category II: Public lands which will be considered for sale. Lands offered for sale for two years may then be considered for othr types of disposal, including exchanges or public purpose disposal actions", except for T5S., R77W. Category I: Special Exceptions - Section 7, Lot 10 USDA-FS Interagency Agreement for use as trailhead and Section 7, Lot 137 - Town of Silverthorne, Right-of-Way for water storage. These lands **are not** shown on the Ownership Consolidation Map.

Public lands are identified for Category II as follows:

T5S, R77W,	Sec. 6	Lots 13, 14, 18, 23, 29, 30, 34, 35, 36, 38, 39, 42, 48, 51, 52, 55
	Sec. 12	Lots 19, 22, 28, 34, 39, 42, 47, 55, 56, 59, 60, 61, 63, 65, 67, 69, 70, 72, 75, 78, 79, 80, 86, 89, 91, 92, 102, 104, 105, 106, 107, 108, 114, 116, 117, 118, 119, 120, 121, 132, 133, 134, 136, 142, 143, 144, 145, 146, 147, 148, 149, 150
T5S, R78W,	Sec. 1	Lots 18, 19, 20, 25, 26, 43, 47, 58, 60, 62, 67
	Sec. 12	Lots 14, 22, 23, 26, 29, 30, 34, 44, 45, 49, 53

KREMMLING RMP/ROD Maintenance
Change #RMP/ROD-2
12-17-86

APPENDIX 12
Map Legend

ATEGORY I: CATEGORY I: The existing public land base to be managed by the Bureau under multiple use concepts and will not be considered for disposal by sale under Section 203 of FLPMA. This existing land base is available for disposal, on a case-by case basis, through boundary adjustment, Recreation and Public Purposes Act applications, or other statutory authority, if disposal serves the national interest. Land exchanges would be considered if the exchange would result in a consolidated land ownership pattern, improved manageability of natural resources, or otherwise be in the public interest consistent with the provisions of Section 206 of FLPMA.

ATEGORY I STATE INDEMNITY SELECTION PARCELS: The Colorado State Board of Land Commissioners has selected lands to satisfy their entitlement under Section 7 of the Statehood Act of March 3, 1875.

ATEGORY II: CATEGORY II: Public lands which will be considered for diposal under the criteria for disposal of CATEGORY I lands. However, these lands may also be considered for disposal by sale under the provisions of Section 203 of FLPMA.

NO JURISDICTION:
Lands for which the Bureau has no management jurisdiction and are not covered by this plan.

APPENDIX 12

RMP MAP
OWNERSHIP CONSOLIDATION/
LAND TENURE

(SEE MAP POCKET AT BACK OF VOLUME)

MAP IN BACK OF ROD

GLOSSARY

GLOSSARY

ACTIVE GRAZING PREFERENCE: The total number of AUMs that can be licensed.

AD VOLOREM TAX: A tax based on the value of property. Another term for property tax.

ALLOCATION: The division of limited resource capabilities or supplies among the competitors for use.

ALLOTMENT: An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN: A document program which applies to livestock operations on the public lands, prepared in consultation, cooperation, and coordination with the permittee(s), lessee(s), or other affected interests.

ALLUVIUM: Unconsolidated rock or soil material deposited by running water, including gravel, sand, silt, clay, and various mixtures of these.

ANIMAL UNIT (AU): One mature (1,000 lb) cow or its equivalent (4 deer, 5 antelope, 5 bighorn sheep, 1.25 elk, or 1 horse) based upon an average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM): The amount of forage necessary for the sustenance of one animal for one month, e.g., one deer for one month equals one deer AUM.

APPARENT TREND: Change in vegetation and soil characteristics resulting directly from environmental factors, primarily climate and grazing as observed at one point in time.

AQUATIC: Living or growing in or on a stream or other water body or source.

AQUIFER: A water bearing bed or stratum of permeable rock, sand, or gravel capable of yielding considerable quantities of water.

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC): An area where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ASSET MANAGEMENT: The Department of Interior program to implement the Reagan Administration's initiative to dispose of excess Federal land and real property in order to facilitiate better management.

ATTITUDE: An intellentual or emotional position with regard to a fact, condition, person, issue, etc., which carries some readiness to act in a particular way.

BROWSE: That part of the current leaf and twig growth of shrubs, woody vines, and trees available for animal consumption.

BUREAUCRATIZATION: A social process whereby an organization in growing larger and more complex becomes more efficient by depending more and more on impersonal rather than personal decision criteria, more clearly and formally defined roles, more detailed and spelled-out rules and procedures, more specialization and use of experts throughout the organization, more objective hiring and promotion policies, etc. Often the process carries with it the danger of over-rigidity of structure which may become an operational handicap (too much "red tape"), so that an informal "underground" system develops to prevent or break serious bottlenecks. Both the formal and informal social structures seem to be necessary for the most effective functioning of the organization. In the modern world, virtually all large businesses, industries, governmental agencies, religious bodies, universities, and other organizations are bureaucracies.

CANOPY: The uppermost layer of vegetation consisting of crowns of trees or shrubs in a forest or woodland.

CARRYING CAPACITY: Also known as stocking rate; an estimate of the maximum number of animals (expressed in AUMs) a given area can support each year without inducing damage to the vegetation or related resources.

CLASS CONSCIOUSNESS: An awareness among persons of similar general social status that they share commonalities in life styles, values, attitudes, interests, problems, and life opportunities. The term was popularized in the writings of Karl Marx, with special connotations, but in general use merely calls attention to mutural awareness of these shared commonalities.

CLOSED DESIGNATION: Areas and trails where the use of motor vehicles is permanently or temporarily prohibited.

CONSERVATION PLANS/LONG-TERM AGREEMENTS: Ranch plans developed by the Soil Conservation Service in cooperation with ranchers/local managers. Such plans outline and prescribe conservation practices and allow for a comprehensive ranch improvement program by providing for cost/share incentives.

CRITICAL RANGE: Range on which a species depends for survival; there are no alternative ranges available due to climate conditions or other limiting factors. May also be called key range, or crucial range.

CULTURAL REMAINS: All prehistoric and historic physical evidence of past human activity which can be used to reconstruct lifeways and cultural history of past peoples. These include sites, artifacts, environmental data, and other relevant information and the contexts in which they occur.

CULTURAL RESOURCES: Those fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events. These resources consist of (1) physical remains, (2) areas where significant human events occurred--even though evidence of the event no longer remains, and (3) the environment immediately surrounding the resource.

CULTURAL RESOURCE INVENTORY: A descriptive listing and documentation, including photographs and maps, of cultural resources; included are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and varying levels of intenity of on-the-ground field surveys.

CULTURAL RESOURCE SITE: A physical location of past human activities or events. Cultural resource sites are extremely variable in size and range from the location of a single cultural resource object to a cluster of cultural resource strutures with associated objects and features. Prehistoric and historic sites which are recorded as cultural resources have sociocultural or scientific values and meet the general criterion of being more than 50 years old.

DISSOLVED SOLIDS: The total amount of dissolved material, organic and inorganic, contained in water or wastes.

EASEMENT: A right afforded a person or agency to make limited use of another's real property for access or other purposes.

ECOSYSTEM: Collectively, all populations in a community, plus the associated environmental factors.

EXCAVATION: The controlled scientific removal of artifacts and recording of data from subsurface cultural resource deposits.

EXTENSIVE RECREATION MANAGEMENT AREA: In these areas, significant recreation opportunities and problems are limited and intensive recreation management is not required. Minimal management actions related to the Bureau's stewardship responsibilities are adequate in these areas.

FAIR MARKET VALUE: The average value of forage consumed (in Animal Unit Months) based on annual livestock market conditions as determined by the USDA.

FEDERAL LANDS: Lands owned by the United States, without reference to how the lands were acquired or what Federal agency administers the lands, including mineral estates or coal estates underlying private surface, but excluding lands

held by the United States in trust for Indians, Aleuts, or Eskimos.

FINAL DEMAND: Exports plus purchases made inside the area with money originating outside.

FLOODPLAIN: The nearly level alluvial plain that borders a stream and is subject to inundation during high water.

FORAGE: All browse and herbaceous foods that are available to grazing animals. It may be grazed or harvested for feeding.

FORAGE POTENTIAL: The optimium amount (lbs/acre) of forage that could be produced in a grazing allotment that is stable, self-perpetuating and in equilbrium with its physical habitat.

FORB: A nongrass, seed-producing plant that does not develop persistent woody tissue.

GRAZING PREFERENCE: The total number (active and suspended nonuse) of animal unit months of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee.

GRAZING SYSTEM: A systematic sequence of grazing treatments applied to an allotment to reach identified multiple-use goals or objectives by improving the quality and quantity of vegetation.

GRAZING TREATMENT: A prescription under a grazing system which grazes or rests a unit of land at particular times each year to attain specific vegetation goals.

GROUND COVER (SOIL): The material covering the soil and providing protection from, or resistance to, the impact of raindrops, expressed in percent of the area covered. Composed of vegetation, litter, erosion pavement, and rock.

HABITAT: The place where an animal or plant normally lives, often characterized by a dominant plant and co-dominant form (pinyon-juniper habitat).

HABITAT MANAGEMENT PLAN: A written and officially approved plan for a specific geographic area which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HUNTER DAY: One hunter spending 12 hours hunting on BLM land, or 12 hunters spending 1 hour each, or any combination of these.

INPUT-OUTPUT STUDY: A type of economic model that is based on data about the dollar volume of transactions between different types of businesses in the area. It can estimate the impacts of a change in one type of business on all the other businesses.

INTENSIVE MANAGEMENT: Managing a vegetation or other resource through a system to obtain desired results.

KEY FORAGE AND BROWSE SPECIES: (1) Forage species whose use serves as an indicator of the degree of use of associated species; (2) those species which must, because of their importance, be considered in the management program.

KNOWN GEOLOGIC STRUCTURE: A trap in which an accumulation of oil and gas has been discovered by drilling and which is determined to be productive, the limits of which include all acreage that is presumptively productive (43 CFR 3100.0-5(a)). If lands are underlain by a "known geologic structure" (KGS), they may be leased only through a competitive system.

KNOWN RECOVERABLE COAL RESOURCE AREA (KRCRA): An area, including Federal lands which meet minimum standards for recoverable coal deposits in accordance with accepted mining practices, as determined by the Director, U.S. Geological Survey. The Federal lands in a KRCRA are classified for coal leasing.

LEASABLE MINERALS: Minerals such as coal, oil shale, oil and gas, phosphate, potash, sodium, geothermal resources, and all other minerals that may be acquired under the Mineral Leasing Act of 1920, as amended.

LEASE: An instrument through which interests are transferred from one party to another, subject to certain obligations and considerations.

LEGAL DESCRIPTION: The description of a particular parcel of land according to the official plat of its cadastral survey.

LICENSED USE: Active use AUMS that a permittee has paid for during a given grazing period.

LINEAR RIGHT-OF-WAY: An easement or permit which authorizes public lands to be used for a specified purpose that generally requires a long narrow strip of land; examples are roads, powerlines, pipelines, etc.

LOCATABLE MINERALS: Minerals that may be acquired under the Mining Law of 1872, as amended.

LONG-TERM: A point in time 20 years following the beginning of the implementation phase for the RMP.

MORES: Strong moral rules for behavior, informally developed over time by a society or other social group. May or may not be formalized into a written legal system. Mores tell members what they *must* do and what they must *not* do for moral reasons. In the U.S. society, most of the mores are also written into formally enacted laws.

MULTIPLE-USE: The management of public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people.

OFF-ROAD VEHICLE (ORV): Any motorized vehicle capable of, or designed for travel on or immediately over land, water, or other natural terrain.

OFF-ROAD VEHICLE DESIGNATION

OPEN: Designated areas and trails where off-road vehicles may be operated (subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343).

LIMITED: Designated areas and trails where the use of off-road vehicles is subject to restrictions, such as limiting the number or types of vehicles allowed, dates, and times of use (seasonal restrictions); limiting use to existing roads and trails; or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year.

CLOSED: Designated areas and trails where the use of off-road vehicles is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

OPTIMUM NUMBERS: The number of animals that may survive on a given range in reasonable condition.

PALEONTOLOGY: A science dealing with the life and past geological periods as known from fossil remains.

PERENNIAL WATER: Bodies of water or streams which contain water yearlong.

PERMITTEE: One who holds a permit to graze livestock on public land.

PHENOLOGY: The study of periodic biological phenomenon such as flowering and seeding, especially as related to climate.

PLANT VIGOR: The state of health of a plant. The capacity of a plant to respond to growing conditions, to make and store food, and to complete the reproductive stages.

POPULATION: All the individuals belonging to a single species occupying a particular area of space.

PREFERENCE RIGHT LEASE: The right of an applicant to apply for resources in public lands before the general public. For example, an applicant who had discovered a mineral deposit under a prospecting permit might be allowed a preference right lease over any other lease applicant.

PRIORITY USE AREA: An area where a particular resource, such as wildlife habitat, would receive management emphasis or priority. The areas are either unique, significant, or best suited for the development, management, use, or protection of a resource. The principles of multiple use and sustained yield would be maintained in each priority use area. Many different uses would be allowed in each priority area, but the priority use would have the first priority. Other

land uses would have limits placed on them to prevent conflicts with the priority resource. In some instances, a use totally incompatible with the priority resource would be excluded.

PUBLIC LAND: Vacant, unappropriated, and unreserved lands which have never left Federal Ownership; also, lands in Federal ownership which were obtained by the Government in exchange for public lands or for timber on public lands. Land administered by the Bureau of Land Management.

RANGE CONDITION INVENTORY: An Inventory conducted during 1980 which include field mapping of range sites by condition class for individual grazing allotments. This information was used to determine initial livestock allocation levels using the parameters of the Soil Conservation Service Range Stocking Guide.

RANGE FORAGE CONDITION: A condition rating based on the amount of forage (lbs/acre) currently produced on an allotment in relation to its potential forage production (lbs/acre). Unsatisfactory -- currently less than 75 percent of potential. Satisfactory -- currently 75 percent or more of potential.

RANGE IMPROVEMENT: A structure, development, or treatment used to rehabilitate, protect, or improve the public lands to enhance the range resource.

RANGELAND MONITORING PROGRAM: A program designed to measure changes in plant composition, ground cover, animal populations, and climatic conditions on the public rangeland. Vegetation studies are used to monitor changes in rangeland condition and determine the reason for any changes that are occurring. The vegetation studies consist of actual use, utilization, trend, and climatic conditions.

RANGE SITE: A distinctive kind of rangeland that differs from other kinds of rangeland in its potential to produce native plants.

RECREATION OPPORTUNITY SPECTRUM: A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. (See Appendix 5 for a description of specific classes.)

RECREATION VISITOR DAY: An aggregation of 12 visitor hours, where a visitor hour is the presence of one or more person on lands and water for outdoor recreation purposes for continuous, intermittent, or simultaneous periods aggregating 60 minutes; e.g., one person for one hour, two persons for one-half hour each, etc.

RESEARCH NATURAL AREA (RNA): An area that is established and maintained for the primary purpose of research and education because the land has a threatened or endangered plant or animal species. It is a biological unit in which present natural conditions are maintained. These conditions are achieved by allowing natural biological processes to prevail without human intervention.

RIPARIAN: Situated on or pertaining to the bank of a river, stream, or other body of water. Normally used to refer to the plants of all types that grow rooted in the watertable of streams, ponds, and springs.

RIPARIAN COMMUNITIES: Vegetation communities found in association with either open water or water close to the surface; includes meadows, aspen, and other trees and shrubs in association with streams and other water sources.

RIPARIAN HABITAT, AQUATIC (STREAMSIDE): Vegetation communities found in association with streams (both perennial and intermittent), lakes, ponds and other open water. This unique habitat, comprising less than 1 percent of the land area, is crucial to the continued existance of the fish species known to occur. Streamside vegetation maintains high water tables, stablizes streambanks, creates quality fishery habitat, and maintains water quality. It is also essential to most terrestrial wildlife species.

RIPARIAN HABITAT, TERRESTRIAL: Vegetation communities found in association with either open water or water close to the surface; includes such habitat features as meadows, aspen stands, and/or other trees and shrubs. This unique habitat is crucial to the continued existance of the majority of the terrestrial wildlife species known to occur. Many species are found no where else.

ROAD: Vehicle routes which have been improved and maintained by mechanical means to insure relatively regular and continuous use.

SALABLE MINERALS: Minerals such as common varieties of sand, stone, gravel, cinders, pumice, pumicite, and clay that may be acquired under the Materials Act of 1947, as amended.

SALVAGE: The recovery of material and data from an affected cultural resource prior to its alternation or destruction, through recordation, documentation, partial or total excavation, and collection for analysis and interpretation.

SCOPING PROCESS: An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

SEDIMENTATION: The act or process of depositing a material, such as water depositing suspended soil particles in an area, such as a stream bottom.

SEDIMENT YIELD: The amount of sediment given up by a watershed over a specific time period, usually a year. Ordinarily, it is expressed as tons, acre feet, or cubic yards of sediment per unit of drainage area per year.

SHORT-TERM: The period of time needed to implement management's decisions following the completion of the EIS, approximately 5 to 7 years.

SOCIAL CONTROLS: Those devices, techniques, facilities, social institutions, or persons responsible for keeping human behavior within socially defined bounds. Formal social controls would be such institutions as police departments, prison systems, or schools; informal controls would be parental discipline, gossip, shunning or other personal rejection, or social rewards given for the purpose of producing desired behavior.

SOCIAL PSYCHOLOGICAL: Having to do with those aspects of individual personality, opportunities, needs, beliefs, behaviors, or other characteristics of individuals which are social induced; the junction of the external society and the individual biological person, whose social influences and demands produce an effect upon the person.

SOCIAL RELATIONSHIP: The set of reciprocal norms and statuses which define how persons occupying the statuses are expected to behave and think toward each other. For example, the statuses of "father" and "son" are *defined by* reciprocal norms (behavioral obligations recognized not only by a given father and his son, but also expected of them by the general society of which they are a part). Therefore "father - son" is a social relationship.

SOCIAL STRATIFICATION: An observable but not clearly defined placement of the members of a society into a hierarchical social class system, based on some combination of factors usually including education, income, and occupation. For convenience, the logical continuum is often arbitrarily divided into "social class" levels (upper, working, lower, middle) depending on these factors plus other criteria such as common life styles, belief systems, life chances, etc.

SOCIAL STRUCTURE: A concept referring to the highly complex set of normatively developed interrelationships among sub-groups within a society, especially among those social institutions (education, economics, politics, etc.) whose integration is essential to the smooth functioning of the society. Social structure does not refer to the behaviors of individuals, but to socially constructed *relational patterns among groups* and among positions within groups which produce orderly and comprehensible interaction among persons and groups.

SOCIAL VALUES: Learned ideological stances which guide social norms, help integrate social groups, and guide personal and group goals, beliefs, attitudes, and behavior. The societal values of "justice" in the U.S., for instance, directs the way we socialize children; define, judge, and punish crimes; distribute goods and money; grade students; pro-

mote employees; elect politicians; and many other daily choices. The sharing of values underlies our choices of friends and mates, and gives us a sense of "belonging" to the general group.

SPECIAL RECREATION MANAGEMENT AREA: Areas requiring explicit recreation management to achieve the Bureau's recreation objectives and to provide specific recreation opportunities. Special management areas are identified in the RMP, which also defines the management objectives for the area. Major Bureau recreation investments are concentrated in these areas.

SPECIES, ENDANGERED: An animal or plant whose prospects of survival and reproduction are in immediate jeopardy, and as is further defined by the Endangered Species Act of 1973, as amended.

SPECIES, SENSITIVE: A Designation which is (1) applied to species not yet officially listed but which are undergoing a status review or are proposed for listing according to Federal Register notices published by the Secretary of the Interior, or the Secretary of Commerce, or in accordance with comparable state documents published by state officials; (2) applied to species whose populations are consistently small and widely dispersed or whose ranges are restricted to a few localities, such that any appreciable reduction in numbers, habitat availability, or habitat condition might lead toward extinction; or (3) applied to species whose numbers are declining so rapidly that official listing may become necessary as a conservation measure.

SPECIES, THREATENED: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and as is further defined by the Endangered Species Act of 1973, as amended.

STEPPE-TYPE VEGETATION: Vegetation found on arid lands that usually have extreme temperature ranges and loess (wind deposited) soils.

SUSTAINED YIELD: The achievement and maintenance in perpetuity of a high level of annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

TIME SERIES MODEL: A statistical method, using multiple correlation, that relates changes over time in the item under study to changes in several other items that are assumed to affect the first one.

TOTAL SUSPENDED PARTICULATES: All solid or semi-solid material found in the atmosphere less than 500 microns in size.

TREND: The direction of change in range condition over a period of time, expressed as upward, static, or downward.

UNDERSTORY: Plants growing beneath the canopy of other plants. Usually refers to grasses, forbs, and low shrubs under tree or brush canopy.

UTILIZATION: The portion of the current year's forage production that is consumed or destroyed by grazing animals. May refer either to a single species or to the vegetation as a whole.

VEGETATION: Plants in general or the sum total of the plant life above and below ground in an area.

VEGETATION MANIPULATION PROJECTS: Actions taken which alter the existing natural plant communities to achieve the goals of management in a particular area. There are several ways in which vegetation can be altered: (1) with fires; (2) mechanically, which includes chaining, plowing, or crushing; (3) chemically; and (4) biologically.

VEGETATION TYPE: A plant community with distinguishable characteristics.

VISUAL RESOURCE: Land, water, vegetation, animal, and other visible features.

VISUAL RESOURCE MANAGEMENT (VRM): The planning, designing, and implementation of management objectives to provide acceptable levels of visual impacts for all BLM resource management activities.

VISUAL RESOURCE MANAGEMENT CLASSES: The degree of acceptable visual change within a characteristic landscape. A class is based upon the physical and sociological characteristics of any given homogeneous area and serves as a management objective.

CLASS I: Areas (preservation) provide for natural ecological changes only. This class includes primitive areas, some natural areas, some wild and scenic rivers, and other similar sites where landscape modification activities should be restricted.

CLASS II: (partical retention of the landscape character) includes areas where changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the characteristic landscape.

CLASS III: (partical retention of the landscape character) includes areas where changes in the basic elements (form, line color, or texture) caused by a management activity may be evident in the characteristic landscape. However, the changes should remain subordinate to the visual strength of the existing character.

CLASS IV: (modification of the landscape character) includes areas where changes may subordinate the original composition and character; however, they should reflect what could be a natural occurrence within the characteristic landscape.

CLASS V: (rehabilitation or enhancement of the landscape character) includes areas where change is needed. This class would apply to areas where the quality class has been reduced because of unacceptable intrusions. It should be considered an interim short-term classification until one of the other classes can be reached through rehabilitation or enhancement.

VISUAL SENSITIVITY: Degree of concern expressed by the user toward scenic quality and existing or proposed visual change in a particular characteristic landscape.

VOLUNTARY ASSOCIATIONS: Those formal organizations (such as clubs, churches, the C of C) to which individuals belong from free choice because of the benefits they preceive for themselves in membership.

WATERSHED: A total area of land above a given point on a waterway that contributes runoff water to the flow at that point.

WATERSHED, SENSITIVE: An area with adverse geologic, soil, and/or vegetative conditions which cause a fragile situation. Small changes in land use intensity can cause large changes in erosion rates. Some of these areas are already experiencing accelerated erosion.

WILDERNESS CHARACTERISTICS: Identified by Congress in the 1964 Wilderness Act: namely, size, naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values such as geological, archaeological, historical, ecological, scenic, or other features. It is required that the area possess at least 5,000 acres or more of continguous public land or be of a size to make practical its preservation and use in an unimpaired condition; be substantially natural or generally appear to have been affected primarily by the forces of nature, with the imprint of man being sustantially unnoticeable; and have either outstanding opportunities for solitude or a primitive and unconfined type of recreation. Congress stated that a wilderness area may also have supplemental values, which include ecological, geological, or other features of scientific, educational, scenic, or historical value.

WILDERNESS MANAGEMENT POLICY: A policy document prescribing the general objectives, policies, and specific activity guidance applicable to all designate BLM wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wilderness areas are developed and described in the wilderness management plan for each unit.

WILDERNESS STUDY AREA (WSA): A roadless area which has been found to have wilderness characteristics.

WILDERNESS VALUES: The wilderness characteristics and multiple resource benefits of an area.

GLOSSARY

WILD HORSES: All unbranded and unclaimed horses and their progency that have public lands on or after December 15, 1981, or that do use these lands as all or part of their habitat.

XERIC VEGETATION: Vegetation adapted to dry conditions.

ACRONYMS

ACEC: Area of Critical Environmental Concern
AMP: Allotment Management Plan
AUM: Animal Unit Month
BLM: Bureau of Land Management
CEQ: Council of Environmental Quality
CDOW: Colorado Division of Wildlife
EIS: Environmental Impact Statement
ERMA: Extensive Recreation Management Area
HMP: Habitat Management Plan
KGS: Known Geologic Structure
KRCRA: Known Recoverable Coal Resource Area
ONA: Outstanding Natural Area
PRLA: Preference Right Lease Application
RNA: Research Natural Area
RMP: Resource Management Plan
SRMA: Special Recreation Management Area
USDA: U.S. Department of Agriculture
USDI: U.S. Department of Interior
USFS: U.S. Forest Service
USFWS: U.S. Fish and Wildlife Service
WSA: Wilderness Study Area

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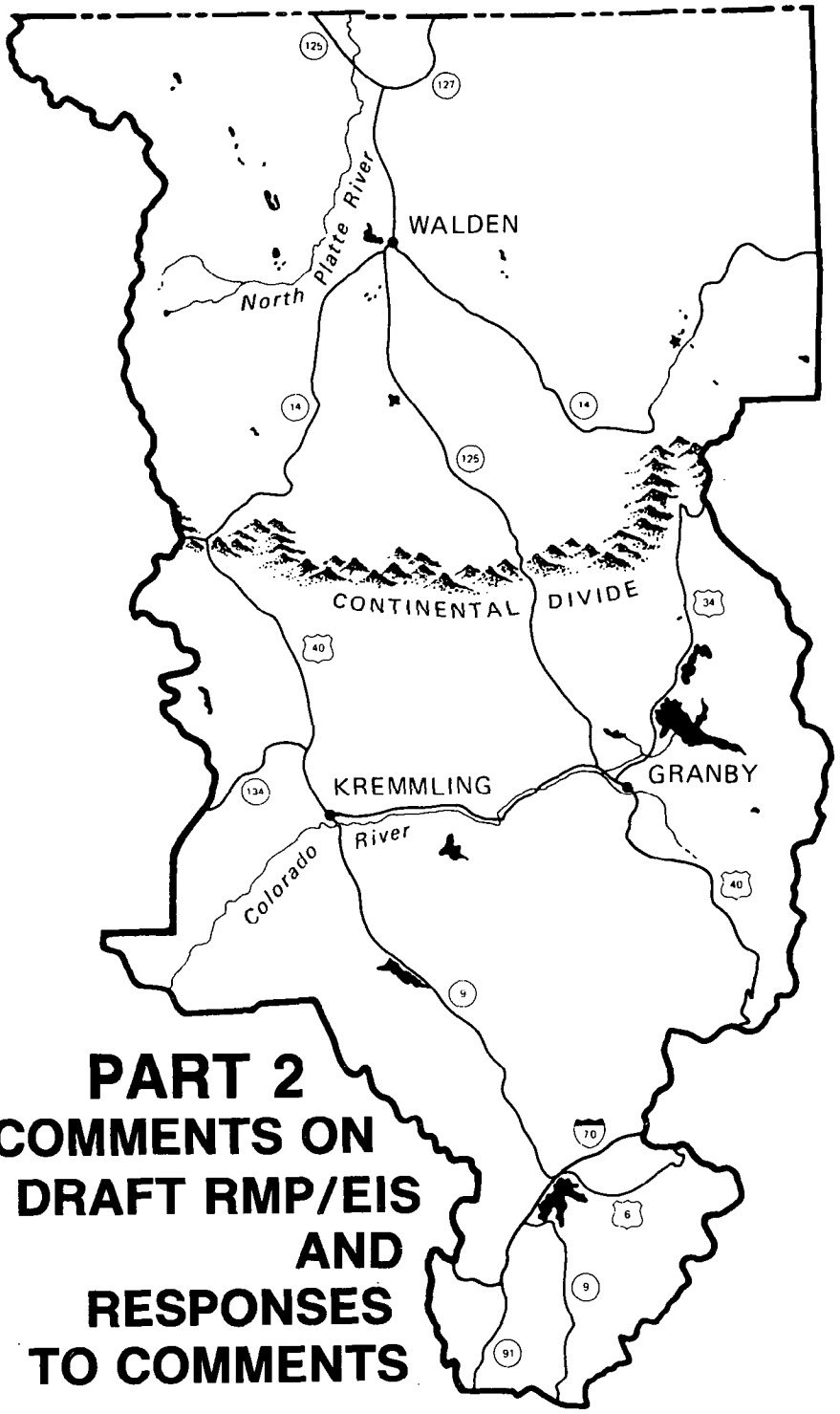

PART 2
COMMENTS ON THE DRAFT RMP/EIS AND RESPONSES TO COMMENTS

PART 2
COMMENTS ON THE DRAFT RMP/EIS AND RESPONSES TO COMMENTS

Part 2 of the Final RMP/EIS includes a copy of all the written comments on the DEIS, oral testimony presented at the public hearings held in Hot Sulphur Springs, Colorado (April 12, 1983), Walden, Colorado (April 13, 1983), and two in Denver, Colorado (April 14, 1983), and responses to those comments.

Individual comments that required a response have a number assigned to them that correspond to a response listed in Section B of this chapter. The response number is placed on the right-hand margin adjacent to the comment. If a particular comment is an observation or is in agreement with the text, no response has been made.

A. Comments on the Draft RMP/EIS

The letters appear in the order they were received at the Kremmling Area Office. Following the letters are the public hearing transcripts in the order the hearings were held. To reduce the total volume of reprinted materials in the text, extensive attachments to some comment letters that do not raise specific issues have not been included. Also, the public hearing transcripts that are reprinted include only that portion where comments were made on the Draft RMP/EIS. Those portions of the letters and the transcripts that have not been reprinted are available for public review in the BLM, Kremmling Resource Area Office in Kremmling, Colorado.

For ease of reference, the written comments and hearings have been listed below according to source. The index number refers to the number in the upper right-hand corner of each comment. Written comments have been assigned a numeral and each of the hearings was assigned a letter of the alphabet:

PUBLIC COMMENTS

List of Contributors

Individual, Group, or Agency	Index Number
Koppers Corp., Inc., Natural Resources Division, Oak Ridge, Tennessee	1
Noranda Exploration, Inc., Denver, Colorado	2
Department of Energy, Loveland, Colorado	3
Paul R. Stuart, Granby, Colorado	4
Ralph E. Hampton, Walden, Colorado	5
Steamboat Solar, Steamboat Springs, Colorado	6
Sarah E. Bransom, Golden, Colorado	7
Thomas P. McKenna, Fort Collins, Colorado	8
David Meyring, Representing Arapaho Livestock Company, Walden, Colorado	9,B
Climax Molybdenum Company, Amax Inc., Golden, Colorado	10
Lynn Cudlip, Grand Junction, Colorado	11
Kirk Cunningham, Tod Young, Sierra Club, Rocky Mountain Chapter, Denver, Colorado	12,D
Wendel Funk, Anchorage, Alaska	13
Mr. & Mrs. Lynn Butler, Aurora, Colorado	14,D
Conoco, Inc., Denver, Colorado	15
David L. Perry, Boulder, Colorado	16
Texaco, Denver, Colorado	17
Amoco, Denver, Colorado	18
Leo G. Massulla, Champaign, Illinois	19
Silver Creek Ski Corporation, Silver Creek, Colorado	20
Tamara Wiggans, Durango, Colorado	21
Daniel & Linda Olsen, Denver, Colorado	22
Minerals Exploration Coalition, Denver, Colorado	23
High Country Drifters Four-Wheel Drive, Robert Tipton, D.D.S., Littleton, Colorado	24,D
Walter G. Durpree, Washington, D.C.	25
Howard K. Schmuck, Arvada, Colorado	26,C
Union Pacific Railroad Company, Omaha, Nebraska	27
Daryl Anderst, Denver, Colorado	28
Dave Boudreaux, Winter Park, Colorado	29
Bobby D. Kiess, Colorado Springs, Colorado	30
Tri-State Generation and Transmission, Don Shanfelt, Supervisor, Denver, Colorado	31
Jim DeLine, Parkview Mountain Ranch, Rand, Colorado	32
Grand County Board of Commissioners, W.A. Needham, Chairman, Hot Sulphur Springs, Colorado	33
Jim & Nancy Yust, Kremmling, Colorado	34
Al Wahl, Planning Consultant, Golden, Colorado	35,C
Rocky Smith, Denver, Colorado	36
Chevron, Inc., Richard T. Hughes, Staff Analyst, Denver, Colorado	37
Department of Natural Resources, Carse Pustmueller, PhD, Denver, Colorado	38
Meyring Livestock Company, Walden, Colorado	39
Davis, Graham, and Stubbs, Denver, Colorado	40
David Freddy, Professional Wildlife Biologist, Kremmling, Colorado	41

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Jackson County, Board of Commissioners, Walden, Colorado	60
United States Environmental Protection Agency, Denver, Colorado	61
Department of Energy, Salt Lake City, Utah	62

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Individual, Group, or Agency	Index Number
Doug Freeman, Representing Timber River Rafting & Colorado River Outfitters, Association	A
Jeff Brown, Denver, Colorado	A
Mike Leroux, Representing Eagle County Soil Conservation Service	A
Keith Holsinger, Walden, Colorado	B
Thomas J. Florea, Denver, Colorado	C
Greg Scott, Boulder, Colorado	C
Peter Gauss, Louisville, Colorado	C
Rita Ellis, Denver, Colorado	D
Joe Lentz, Aurora, Colorado	D
Darrell Cole, Jerry Cronk, Representing Mile-High Jeep Club	D
Barry Shields, Englewood, Colorado	D
Stanley Brown, Littleton, Colorado	D
Joseph Cleres, Arvada, Colorado	D
Elaine Walter, Boulder, Colorado	D
Martin Walter, Representing Union Peaks Group of Sierra Club	D
Robert Kurtz, Arvada, Colorado	D
Patricia Graham, Wheat Ridge, Colorado	D
Sharyl Kinnear, Boulder, Colorado	D
Merry Havens, Boulder, Colorado	D
Dorothy Cohen, Boulder, Colorado	D
Harriet Morrision (residence not specified)	D
Larry Swink, Representing Colorado State Association of Four-Wheel Drive Clubs, Littleton, Colorado	D
Charles Ginder, Longmont, Colorado	D
Lloyd Mataken, Arvada, Colorado	D

1

Koppers Company, Inc., Natural Resources Division
Suite 1050, Jackson Plaza Tower
800 Oak Ridge Turnpike
Oak Ridge, TN 37830, Telephone 615-483-7934

KOPPERS

RECEIVED
83 MAR 17 AM 9:45

March 14, 1983

Mr. Harold Belisle, Manager
Bureau Of Land Management
Box 68
Kremmling, CO 80459

RE: BLM Land Disposal

Dear Mr. Belisle:

This letter is to inform your office of the continued interest of Koppers Company, Inc. in 80 acres of BLM land in southeastern Grand County. We first expressed an interest in this acreage in 1980 as evidenced by a copy of my letter to Roger Zortman dated August 19, 1980 (copy attached).

I have recently reviewed your just published Kremmling Resource Area RMP/EIS and see that under the Preferred Alternative this 80 acre tract would be removed from your management.

By means of an amendment to our Land Exchange Proposal with the U. S. F. S. (copy attached), I have requested this 80 acres. This was done at the suggestion of the Forest Service and with the consent of the BLM. 162

We feel the exchange of this acreage is justified as Koppers now owns the adjoining lands to the south, west and north. We still hope to acquire the U. S. F. S. lands to the east.

Please notify me if your office is no longer in agreement with the proceedings to date as to the disposition of this land. Also, please advise me if the status of this parcel changes in any way.

Sincerely,

Jack W. Buckler
Administrator Of Natural Resources

JWB/ph

Attachment

2

Noranda Exploration, Inc.
12640 W. Cedar Dr., P.O. Box 15636
Denver, Colorado 80215

Rocky Mountain District
Tel (303) 988-6464
Telex 45 4375
Noranda DVR

noranda

RECEIVED
83 MAR 25 AM 11:21

March 24, 1983

Mr. Harold Belisle
Area Manager
Bureau of Land Management
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

I have recently reviewed the Draft Resource Management Plan and EIS for the Kremmling Resource Area. I found the preferred alternative plan to be well balanced in its consideration of resource development and resource conservation. The plan appears to be well thought through and should not be overly restrictive of resource development on public lands.

The insight you and your research team showed in not recommending the Troublesome WSA for inclusion in the wilderness system is commendable.

It is my belief that your draft plan should be a model for resource management of public lands.

Very truly yours,

NORANDA EXPLORATION, INC.

William E. Threlkeld

WET/kkd

3

Department of Energy
Western Area Power Administration
Loveland-Fort Collins Area Office
P.O. Box 3700
Loveland, Colorado 80539

APR 4 1983

Mr. Harold Belisle
Area Manager
Kremmling Resource Area
Bureau of Land Management
P. O. Box 68
Kremmling, CO 80459

Dear Mr. Belisle:

This is in response to your request for review and comment on the Kremmling Resource Management Plan/Draft Environmental Impact Statement (DEIS). Except for electric utility input, the DEIS is quite comprehensive and could have a substantial impact upon other agencies and/or individuals in the north-central Colorado area.

We are concerned about the lack of discussion of electric transmission utility facilities or long-range planning for such. The DEIS could be greatly strengthened with inclusion of present and future transmission corridors in the discussion of alternatives. This would be in keeping with the Council of Environmental Quality Regulations (Section 1502.14) to sharply define the various issues and provide a clear basis for choice among the various options discussed. The maps included in Volume 2 should also reflect these facilities. 163

We would like to request that you place us on the mailing list for any documents and include us in any discussions that may have an effect upon our facilities in the area. Should you have further questions, please feel free to contact Mr. Bill Melander, Environmental Specialist (303-224-7231). Thank you for the opportunity to review this document.

Sincerely,

Peter G. Ungerman
Area Manager

4

April 5,1983

To Whom it may concern;

I'm writing this letter in reguard to the sale of any public land in the United States. I believe the one poceesion all people have is our public land. It is my opinion to sell this land is giving it to only the rich. I have lived in Grand county for 37 years. In that time I have seen much of the private property change hands. Most of the time when it changes hands fewer people are allowed to use it. I honestly believe this would also be the case in selling public land. I know some of this land has no public access, but this land is still of public value. It is still usable for grazing permits and other economic uses, such as forestry. With as much growth as we see each year these areas also provide off limits areas. Much of this land is winter range area for big game animals. It is also habitat for smaller animals year around. Many counties now try to develop green strips and parks to prevent large areas of development. Much of the public land already accomplishes this. If these lands are sold they will be gone forever. I think there must be better ways to handle these lands than that. Perhaps more of a users fee program or such may be an answer. A habitat stamp to hunt fish or camp on the land? This could be made to include the property owners who surround these lands and sell the rights to get to them. And stiff penalties imposed on persons who post this public land. Enforcment of these laws could be left to local agencies who would be allowed to keep percentages of fines. I know I'm not smart enough to understand all of the problems or even guess at all of the solutions. It just seems there must be a better way to solve the situation

5

RECEIVED

1983 APR -7 AM 11: 24

BUREAU OF LAND MGMT.
KREMMLING R.A.
KREMMLING, CO. 80459

Ralph E. Hampton
Box 145
Walden, Colorado 80480

April 4, 1983

Mr. Harold Belisle, Area Manager
U.S. Department of the Interior
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

In response to your letter concerning the Resource Management Plan, Environmental Impact Statement, and after talking with B.L.M. personnel that were in Walden during March, I am submitting the following request.

I would like to purchase, if it is offered for sale, the following tracts of land:

NE¼, NE¼ of Section 32 and SE¼, SE¼ of Section 29 and W½, NW¼ and SE¼, NW¼ and SW¼ of Section 33 in Township 8 north and N½ NW¼ and SE¼ NW¼ and SW¼ NE¼ of Section 4 Township 7 north Range 77 consisting of 520 acres known as Bradfield # 7078 on your grazing forms. 164

This tract of land is surrounded by deeded land. The portion which I own borders it on the east side. It produces only 27 A.U.M.S. per year. I believe if I owned it I could thin some of the timber, irrigate a portion of it, and possibly utilize it for recreation in the future.

I am quite sure the sale price to the government would be much more beneficial than the small income it now generates.

I would certainly appreciate your consideration in this matter.

Sincerely,

Ralph E. Hampton

Ralph E. Hampton

6

STEAMBOAT SOLAR

4/11/83

Dear Mr. Belisle; Area Manager,

Your RMP, unique in its range of alternatives, is commendable. I support the Natural Environment Alternative for the following reasons:

1) Troublesome WSA highest value is appreciated in its wild, pristine nature.

2) Increased coal leasing lands is economically unfeasible besides environmentally harmful at this time.

3) North Sand Hills historical sites need more restriction than Special Rec. Area to conserve rare topography and cultural artifacts.

As a white water enthusiast I commend your opposition to the Azure Dam project. Thank you for considering my feelings.

Sincerely,

Charla Palmer

PO Box 323 / Steamboat Springs, Colorado 80477 / (303) 879-3076

7

April 11, 1983
1035 Quartz Street
Golden, CO 80401

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

Dear Mr. Belisle,

Having recently reviewed the Kremmling Resource Area RMP, I would like to offer my compliments to you and your staff for preparing one of the better documents concerning the management of our public lands. I would like to go on record to support the "Natural Environment Alternative" as I believe it offers the best long-range protection of the Kremmling area's only wilderness area-Troublesome WSA.

I am an avid recreationist of this area and believe that wilderness designation is deserving of serious consideration. Although projected coal development in the RMP is viable, the existing operations in the area have shown that the costs are too high, given the transportation problems, to warrent increased production. Therefore, I support maintaining the existing levels of production.

Thank you for your consideration of these comments.

Sincerely,

Ms. Sarah E. Bransom

Ms. Sarah E. Bransom

8

THOMAS P. McKENNA
P.O. Box 1356
Fort Collins, Colorado 80522
303 226-5704

12 April 1982

Mr. Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

I urge you to adopt the Natural Environment Alternative, the seventh alternative, for managing our public lands in your area.

Enough public subsidy and concession has already been made to the grazing, timber, mining, and other pro-development interests to increase their private profit. It is time to protect our remaining eligible lands from further exploitation, to save them for future generations.

The Troublesome Wilderness Study Area should be designated wilderness.

Sincerely,

Thomas P. McKenna

Thomas P. McKenna

TO: Area Manager, Kremmling Resource Area B.L.M.
P.O. Box 68
Kremmling, CO. 80459

FROM: Arapahoe Livestock Company
P.O. Box 367
Walden, CO. 80480

SUBJECT: Draft Resource Management Plan

Arapahoe Livestock Company has filed for a reservoir that would be partially on Bureau of Land Management lands. The name of the proposed reservoir is Damfino Reservoir. As proposed this reservoir would have a dam approximately 43 feet high, would store 12,580 acre feet, more or less, and when full would cover 670 acres, more or less. The dam will be located in the S ½ of the SE ¼ of Section 32, T 7N, R80W of the 6th P.M. Lands covered by the reservoir would be in Section 32, T 7, Sections 5, 6, 7, and 8, T 6 R80W of the 6th P.M. The high water line will be at approximately the 8200 foot contour as shown on the Coalmont and Spicer Peak 7.5 minute series topographic map.

It is our understanding that most of the land needed for this reservoir has been designated for Coal Leasing on the Preferred Alternative Resource Management Plan. We think this proposed reservoir will be desirable and feasible. Therefore this possibility should be considered in the final Resource Management Plan for these affected lands. 29

A copy of the Ruling of Referee (conditional) dated November 15, 1982, is attached.

These comments are respectfully submitted,

David Mayring for
Arapahoe Livestock Company

CLIMAX MOLYBDENUM COMPANY
AMAX MOLYBDENUM DIVISION
AMAX INC.
WESTERN OPERATIONS

April 26, 1983

Mr. Harold J. Belisle, Area Manager
U.S. Department of Interior
Bureau of Land Management
Craig District, Kremmling Resource Area
1116 Park Avenue
P. O. Box 68
Kremmling, CO 80459

Re: Resource Management Plan/Draft Environmental Impact Statement on Kremmling Resource Area

Dear Mr. Belisle:

INTRODUCTION

AMAX is a diversified natural resource company owning mining facilities and ranching operations within the Williams Fork Drainage of the Kremmling Resource Area. The Company's Henderson Mill facilities, along with approximately 13,000 acres of active ranch and grazing lands, are located in the south-central portion of the Kremmling Resource Management Area, as shown on Attachment A. The Company will be directly affected by land management decisions implemented on land surrounding the Company's facilities.

We have reviewed the Resource Management Plan and the Draft EIS, identifying the S1/2 of the SW1/4 of Section 26, Township 1 S., Range 79 W. for disposal (hereinafter "Surplus Lands"). AMAX believes that disposal of these lands into private ownership would not be the highest and best use of the parcel and would be inconsistent with the public interest, as more fully discussed below.

DISCUSSION

In 1967 AMAX acquired the 5,757-acre Skylark Ranch in the Upper Williams Fork Valley as buffer around its planned Henderson mining and milling project. The Skylark Ranch has been leased for ranching operations since August 1968. Soon after purchase and after consultation with environmental consultants and the Colorado Department of Wildlife, AMAX undertook a program to preserve and enhance the big game habitat on Skylark Ranch and surrounding area. At the commencement of the project, a survey by an environmental consultant indicated there were approximately 35 elk in the area. In December 1982, a survey by the same environmental consultant indicated the

Mr. Harold J. Belisle
April 26, 1983
Page Two

herd had increased in population to approximately 200 animals. This is 6% of the total elk population within the Kremmling Resource Area (Report on Environmental Reconnaissance, Big Game, Henderson West Area, by Fred A. Glover, Environmental Consultant, December 1982). See Attachment B. The AMAX program has consisted of various measures, including restricting vehicular access to its property, allowing public access and hunting by foot only, voluntary relinquishment of a Forest Service grazing permit thereby increasing available forage, and restricting development in critical elk habitat.

Reference to Exhibit A shows that the Surplus Lands are surrounded by the Skylark Ranch or undeveloped national forest lands. The sale of these lands and development by private interests would seriously disrupt the AMAX/Colorado Department of Wildlife efforts to enhance the Williams Fork elk herd by expanding access to the general area and affording opportunities for intensive utilization, such as hunting camps and resort facilities.

The preferred alternative for the Kremmling Resource Area Land Management Plan identifying the Surplus Lands does not state whether the disposal would be to another federal agency, for example, the U.S. Forest Service who owns adjoining lands, or into private ownership. Disposal to the U.S. Forest Service or another land managing agency would be consistent with the AMAX/Department of Wildlife elk enhancement program, and the statutory and regulatory mandates of the Bureau of Land Management. However, disposal to private parties would seriously disrupt the extensive joint efforts of AMAX and the Colorado Department of Wildlife. AMAX is advised that the Department of Wildlife will be submitting its own comments opposing the proposed disposal. 165

A comparison of the BLM criteria for disposal to the circumstances of this particular tract of land reveals that the Surplus Lands should not be conveyed out of public ownership. Page 118 of the Draft Environmental Impact Statement set out the criteria for determining land suitable for disposal.

1. The first criteria relates to tracts of land which would support or enhance recreation and tourism. Disposal of the tract in question would have a significant adverse effect on the elk population in the area, thereby reducing hunting opportunities and the tourism related thereto.

2. The second applicable criteria relates to isolated tracts. Although the parcel in question is isolated in the context of land management authority, it is simply a contiguous appendage to other public lands. Accordingly, its disposal, if it occurs at all, should be made to the U.S. Forest Service for management in conjunction with the surrounding national forest lands.

3. Criteria 5(a) states that isolated tracts should be considered for disposal only if they have no important wildlife values (winter range, nesting areas, mating areas, etc.). AMAX evaluation of the lands as supported

Mr. Harold J. Belisle
April 26, 1983
Page Three

by the U.S. Forest Service in its Williams Fork Land Management Plan of January 1978 indicate that the lands in question are of particular importance because they constitute big game winter range, elk calving areas, and elk migration routes. (See Attachment C obtained from the U.S. Forest Service, Draft Environmental Impact Statement for the Williams Fork Land Management Plan.) As the U.S. Forest Service points out:

> The capacity of the Williams Fork Unit to support elk is governed in large part by availability of critical winter range.

Disposal of the lands in question would be inconsistent with preservation of these wildlife values. Due to their pivotal location, disposal of the Surplus Lands would have an impact far in excess of the acreage lost.

4. Criteria 5(d) recommends disposal of isolated tracts where land management is difficult due to tract size, access difficulties, or adverse site conditions. It is AMAX's view that these lands can best be managed by allowing them to remain undisturbed and unimproved for use along with surrounding lands as wildlife habitat and recreation areas.

Finally, the proposed disposal appears to be in conflict with the statutory and regulatory mandates expressed in FLPMA. Congress declares as its policy that the public lands be retained in federal ownership unless disposal of federal lands will serve the national interest. 34 U.S.C. 1701. Section 201 of the Federal Land Policy and Management Act calls for the secretary to give priority to the designation and protection of areas of critical environmental concern. The lands in question are vital to the continued operation and success of the AMAX big game enhancement program and the Colorado Department of Wildlife strategic wildlife plan. Disposal of the lands in question into private ownership would have serious and permanent environmental impacts, which would be contrary to the public interest, and would not be the highest and best use of the land. Accordingly, AMAX urges the Bureau of Land Management to retain the lands under BLM management, or transfer the land for future stewardship by the U.S. Forest Service.

We appreciate the opportunity to comment on the proposed Land Management Plan and hope that our comments will be considered favorably.

Sincerely,

MG:cd

Max Gelwix, Manager
Engineering & Construction

27 April, 1983

1107 Bookcliff Apt. B
Grand Junction, CO 81501

Harold Belisle
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

I wish to commend you on a clearly written RMP that offers several diverse alternatives. Because of my interest in wilderness, I must support the Natural Environment Alternative as this is the only alternative which recommends a wilderness designation for the Troublesome WSA.

Last fall I presented a small program on Wilderness Study Areas within BLM jurisdiction. During the day long presentation in Grand Junction, I had a chance to talk with many people. One person knew the Troublesome area. Relatives ~~owned~~ of his own quite a bit of property adjacent to it. This fellow was extremely interested not only in the private land, but in the BLM land as well. He was quite a hunter

and felt the opportunities in the Troublesome area were tremendous. Poaching was a problem and it was suggested that less or no roads into the area could ameliorate this problem. Along with a possible Forest Service addition, this combined area would be a beautiful addition of the wilderness system.

I urge you to reconsider in your final EIS and recommend the Troublesome area for a wilderness designation.

Another area of concern, having worked as a Range Technician for the Moffat District is the improvement and/or resting of grazing lands. Is it true that 77% of the range is in "unsatisfactory" condition? If SVIM was used to measure the range condition, I question that this is an accurate figure; however, it is likely that much range improvement is necessary. Less coal leasing would allow for greater the possibility of more range improvement for cattle as well as wildlife. The Natural Environment Alternative would allow for such improvement. 57

Thank you for taking these comments into consideration.

Sincerely,
Lynn Cadlip

Agency Copy 12

Sierra Club
Rocky Mountain Chapter

"...TO EXPLORE, ENJOY AND PRESERVE THE NATION'S FORESTS, WATERS, WILDLIFE AND WILDERNESS..."

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
Kremmling, CO. 80459

Dear Mr. Belisle;

These comments are made on behalf of the 6800 members of the Rocky Mountain Chapter of the Sierra Club on the Draft Plan and EIS for the KRA. I have divided these comments into the categories below.

Good Points. This Plan and EIS is of higher quality than others that I have seen in the past year or two. To begin with, the alternatives discussed reflect a very reasonable range of uses and intensity of uses. The Plan, unlike others, recognizes the importance to the area of recreation, although still not enough in our opinion. The Preferred Alternative is not our Preferred Alternative by any means, but at least reflects some sort of middle position between economic development and preservation alternatives. Finally, the writing style reflects less of the robotized, lobotomized bursaucratese that is prevalent in other plans; descriptions and prescriptions tend to be more candid and readable. In short, not a bad effort, despite some bad biases. The maps are nice, too.

Not-so-good Points. General. Every alternative save the Continuation of Present Management appears to require intensive management, i.e. a large amount of control and activity on the part of the Bureau. While one can praise the idea of more time, money, and personnel being devoted to Federal land management (of course, we can still argue about where this increased effort is spent), it seems unlikely to us that the necessary budget committments will be made in the near future. For alternatives to be viable and credible, they must not be merely "wish lists", but reflect the real world. I may have missed it, but I did not detect any table of budgetary requirements, manpower requirements etc. for the alternatives. The Final should contain one, since it will allow us (and Congress) to better judge what is feasible and what is not. 1

Mining. The proposal in the Preferred Alternative (PA) to increase the land area to be studied for coal leasing by about 10 times seems excessive. The DEIS states that though 45,000 acres would be studied for this purpose (p. 158) in the PA, the 13,000 acres to be studied in other alternatives would allow for maintenance and some expansion of present operations. We believe that this is all that is necessary for such a marginal resource- marginal for the economic, transportation reasons cited on p.184. The Bureau is already engaged in a monumentally foolish program of precipitous and unnecessary coal leasing throughout the West. It is not desirable that this Resource Area follow lemming-like down the same path. Aside from economic arguments, there are of course other impacts to consider. On p.38 we read that the "Coalmont Formation is a dependable source of groundwater"; can one not anticipate adverse affects on this water from (especially) surface mining? The wildlife habitat in North Park is apparently also quite rich (2nd highest waterfowl population in the State) and would probably suffer direct and indirect impacts from increased mining. Finally, the BLM's rationale for more mining is apparently its putative positive economic impact on the Walden area. However, this development would also strain the local "infrastructure" (p.183) and alienate a substantial fraction of land owners (about 40%) who presently indicate that they would oppose leasing of Federal coal under their property. (In discussing this at the Denver Open House, BLM staff seemed to indicate that this 40% represented a far smaller percentage of the land area. However, that 40% does represent votes of people who might find even adjacent land mining a nuisance). Table 4-1 (p.183) also indicates that whatever economic benefits there are would go to a rather small percentage of the Resource Area population. The Recreation Alternative, by contrast, with less coal emphasis, benefits the larger population of Grand County. In fact, it is probable that all minerals activities on BLM lands could cease without greatly disrupting the local economy, in which 85% of personal income derives from non-agriculture, non-mining sources (Table 2-21). 60

As far as other mineral resources go, we suggest "no surface occupancy" stipulations on oil and gas exploration activities on any sensitive lands in the KRA. This should not cause any great loss, since oil and gas production has declined substantially in the past decade (p.84) and the potential does not appear to be great in any case. 30

The description of the Henderson Moly mine's operations on p.84 is out of date. Production is currently way down, and may not recover for awhile.

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Grazing/Range Management. It is revealing (but not surprising) to read: (p.88) that 77% of the range in the KRA is in "unsatisfactory" condition, that livestock raising has been a declining industry since about 1970 (p.90), that ranching income and expenses represent only about 7% of the economic activity in the KRA, that only 4% of the allotments are presently under intensive management (p.88), and that (contrary to the statement on p.91) the AUM grazing fee is only $1.45, whereas between $3-20/AUM would be required for range improvements depending on the alternative (p.149). It is apparent that what we have here is a marginal, environmentally destructive industry that could not, despite the enthusiasm and tenacity of its practitioners, survive very well or very long without subsidies. Granted, the BLM is proposing to cut back allotments 13%, and that is a proper first step, but it appears that a lot more money and effort will be needed to repair a much abused landscape. We support BLM's proposals for pasture and riparian fencing and for limited amounts of "vegetation manipulation" (let's not propose to cut 50% of the aspen, please!), but we wonder if such efforts will not be too little, too late and economically unfeasable in any case. Perhaps a cut greater than 13% in AUM's is necessary. The Level Two grazing management proposal seems best (p.75) from an environmental perspective, but unless grazing fees and range improvement budgets increase, level 3 may be the one attained. 58

Timber. We are pleased that the BLM has adopted at least some sort of slope (40%) and productivity (20 ft^3/acre-year) standards for timber operations (p.95), although the Sierra Club has consistently advocated a productivity standard of 50 ft^3/acre-year to guarantee long-term sustained yield. We are not pleased that major timber activity is planned for the Troublesome WSA (p.176), whose presently wild and natural qualities will be unnecessarily abused for the sake of a resource that, together with a much larger resource on Forest Service lands still contributes a mere 7% to the local economy. Whatever the BLM's ultimate view toward wilderness status for the Troublesome, it should at least administratively protect the wildlife habitat, and watershed protective values (p.87) of this area from timbering and vehicle access.

The "limited forest management" scheme on p.77 seems both economically and ecologically preferable to us.

Wilderness/Recreation. The BLM has properly recognized the importance of outdoor recreation to the KRA economy. Its non-wilderness recommendation for the Troublesome is therefore anomalous. We believe that the economic opportunities foregone by wilderness status would be minor (p.64), but the recreational, wildlife and water quality values preserved would be substantial. Sure, there is a fair amount of wilderness in the general area, but (1) primitive camping, fishing, hiking and climbing are all large uses which are increasing rapidly in the KRA (p.107 Table 3-26) relative to hunting and ORV/motorized use and are best accommodated by wilderness, and

 12

(2) on a national scale the amount of unroaded, relatively pristine land is very small and rare. We need to save as much as is left.

Two of BLM's complaints against the Troublesome are its private inholding and "the lack of special values that wilderness would protect" (p.109). However, the BLM has recommended at least one other area for wilderness (Bull Canyon, Craig District) with exactly the same "problem", and, on the second point, roadlessness is by itself a unique characteristic in this country. Another complaint is lack of access (p.171), but this is a blessing for wilderness areas because it makes illegal motorized intrusions more difficult. In summary, the Club strongly favors a wilderness recommendation for the Troublesome. 134

Another important recreation issue is the conflict between the proposed Azure Project and float-boating on the Colorado through Gore Canyon. As the DEIS points out, boating is a very popular recreation on this river stretch and a non-negligible contributor to the local economy. As presently proposed the dam would have large impacts on fisheries and wildlife, as well as boating; I understand that the recently issued DEIS on this project is a virtual catalog of negative impact projections. The BLM presently takes an equivocal position on the Azure Project in all alternatives save one. We believe that in the FEIS it must take a clearer stand (hopefully against) and discuss the impacts and the agency's leverage on the Project in more detail. 112

The final recreation issue is ORV use in general and use in the North Sand Hills in particular. We object to the proposed change in status of this area from Natural Area to SRMA. I'm not sure of the exact regulatory distinctions, but it appears to mean that ORV use will be less restricted. BLM does propose to restrict vehicle use to areas where vegetation and cultural artifacts will not be destroyed. This may be feasible in principle, but the present apparently restrained behavior of users from ORV clubs may not continue if easier access is acquired and more people use the area. BLM has never been a very effective police force. It would probably be better if BLM did not try to get better access. 113

In general, the description of site vandalism problems and poor study of sites throughout the KRA found on p.110 would indicate to us that more motorized traffic closures are necessary. The "high adverse" impacts on cultural resources in the PA (p.181) is a flaw of this alternative. 149

Miscellaneous. It is questionable to us whether the public regards the sale of public lands as important as their exchange for the sake of efficient management (p.113). Certainly our public would be opposed to any significant land sale. Even a glance at the land ownership map for the KRA tells one that the BLM has severe management problems on its hands with isolated parcels. Nevertheless, we still believe that exchange is more likely to be in the long term public interest.

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All these comments together suggest to us that of all the alternatives, the Environmental Protection one is best and we would advocate its adoption by BLM. Alternatively, the PA should be amended as suggested above.

Thanks for your attention to and consideration of these comments.

Sincerely,

Kirk Cunningham

Kirk Cunningham
Conservation Chair

KC/kr

21st April 1983 13

To Harold Bellicle, B.L.M. Area Mgr.
Kremmling Resource Area
P.O. Box 68 Kremmling, Colo. 80459

from Wendell Funk
home 10391 Hwy 39 Grand Lake, Colo. 80447
temporary C/o SRA 4F Anchorage, AK 99507

Re Kremmling Area Resource Mgt. Plan

Your mailing to me of Draft Volumes 1 & 2 is very much appreciated. The amount of information gathered, studied and the formulation of seven alternatives is laudable.

The "Social Analysis" section was the best ever read of public land management plans. The fifth paragraph begins, "Values foregone must, however, be weighed against presents foregone..." Applauded. In the conclusion of these remarks, we will return to this sentence.

The alternative that is my preference is not the one you selected. And no doubt there are hundreds who selected among the other five alternatives.

- 2 -

Why did I select the alternative that I did? The concluding sentence of the paragraph referred to above reads, "Decision makers must consider both present and future needs in evaluating alternatives for land management." We agree on this point and surely would also agree that no one can accurately determine future needs. So unless there is an immediate, direct national need (we are considering land resources belonging to the national public) for the resources of the Kremmling area, why not give great weight to "Table 4-10" "... Flexible Futures for Various Alternative Emphasis" in selecting among the seven alternative plans?

The last sentence of the fourth paragraph following Table 4-10 reads, "The table should be read by columns rather than by rows and assumes emphasis is given to the alternative heading each column." Fine, and to emphasize the difference between the columns, let's assign a weight of +1 to "Flexible", 0 to "Neutral", and -1 to "Futures Foregone". Now total the num-

-3-

bers in each column. Which two columns total the highest +3? Which column totals the lowest, -4?

So why wasn't the "Natural Environment Alternative" selected as preferred? The column totaled +3. The column totaling -4 was the "Preferred Alternative".

Let us consider selected sections of the "Natural Environment Alternative" as presented in "Chapter 3".

The first paragraph contains this significant sentence, "The enjoyment and use of the natural environment for present and future generations, both locally and nationally, would be a high priority." (Underlining mine) Excellent, IF: 1- "use" includes conservation or enhancement of the natural environment for future use; 2- the "present ... future" dichotomy fully recognized greater weight should be given the future as, hopefully, it is of an infinitely longer time span. (Unfortunately, due to myopia and power politics, this "greater weight" is not usually the case.); 3- The "locally ... nationally"

-4-

dichotomy is truthfull and grants the local citizens no more privileges than they are entitled to as national citizens. (This of course almost never occurs due to political pressure and information access)

The amount and rate of mineral extraction will be determined by economic and political factors at the regional and national level. What ever alternative is selected will be "modified" to accomodate. Would that this was not so, but given the mining laws and corporate power, this is reality.

27 The first sentence following the heading "Mineral Materials" reads, "Federal lands ... would provide free materials to local, state, and Federal agencies ...". Why should citizens of local counties, or even of the state, get "free" gravel from the national public's land? Why should they pay a fair price for this resource which belongs to all other U.S. citizens, present and future, fully as much as to them?

It is interesting that the "Natural Environment Alternative", after implimentation, provides more grazing for

-5-

both livestock and wildlife, at less cost, and with a higher percentage of range land in satisfactory condition than the "Preferred Alternative"! How many ranchers and hunters do you suppose realize this?

After the new allowable cut is determined in 1987 (It should not exceed growth rate!), it is doubtfull the cut under the "Natural Environment Alternative" will be significantly lower than under the "Preferred Alternative". And how many local loggers do you suppose realize this?

The "Natural Environment Alternative" is more pro-wildlife than the "Preferred Alternative", although the acres devoted to TSE are the same for both alternatives the "Natural Environment Alternative" places them in a higher category of protection. Man is greatly amiss in protecting other life forms. It is not generally recognized how valuable all germ plasma is to man.

Visual resources are given far too little consideration by all alternatives. Why did Am-Track recently switch its

daily Denver - Salt Lake round trip to go through Grand County? Visual resources, this route being more scenic than their abandoned route. Visual resources are THE reason why millions (over 2½ million to Rocky Mtn. Nat'l Park alone) visit the region each year. Visual resources are the primary interest of a wide spectrum of outdoor users - backpackers to wildlife photographers.

The "Natural Environment Alternative" is the only one which, evidently by existing regulations, will elevate some land (the Troublesome WSA) to a Class I visual area.

114 [In view of the importance of the areas visual resources and their greater protection and enhancement provided by the "Natural Environment Alternative", "Table 3-27" ("Visual") listing the "Degree of potential change in overall character" as only "negligible", is low of the mark!]

Both the "Natural Environment" and "Preferred Alternative" propose maintaining the Upper Colorado SRMA, as well they should. This is a unique setting for the enjoyment of canoes, kayaks,

and rafts. The deduction of the recreational site by the proposed agave project should not be permitted.

The only significant recreational difference between the "Natural Environment" and "Preferred" alternatives is the use made of the North Park Hills. Those who like clean air, bird songs, and solitude and those who like roaring exhaust and sand throwing tires, have mutually exclusive value systems. The obvious which group is conservation oriented, and its equally obvious which group has the greater political clout.

There is no significant difference among all alternatives in the percent of the public land open to motorized vehicles. The range being 88% to 99%. Isn't it hypocritical to talk of achieving energy self-sufficiency then encourage motor vehicle use of public lands by opening 90% of their area to such use? Should not those who recreate with their arms and legs only and who highly value clean air, quietness, scenery and solitude be given greater consideration? Would not a more equitable sharing and greater conservation

of the great outdoors occur if a 30-40-30 percent (open-limited-closed) pattern prevailed?

All outdoor recreation trend studies indicate a continued rapid growth. Surely those in charge of public recreation lands are concerned how "people will be managed" in ten to twenty years to prevent the death of vegetation by trampling and the death of wildlife by lack of food and not being able to get away from people. Would a given area of recreational land provide more people a higher quality experience if they are separated from a vehicle? And wild wildlife also benefit?

[A suggestion: With respect to recreation on B.L.M. lands in the Kremmling area, the public would be well served by greater availability of information about various locations, their features (elevation, topography, water, trail difficulty, vegetation, wildlife present, etc), access roads and condition, maps to use, distance to nearest town, etc. A brochure would be a fine method of providing such information.]

If one values retaining the rapidly dwindling areas possessing wilderness potential as wilderness, the "Natural Environment alternative" is the only one of the seven which does. The Bureau's study shows the Troublesome WSA does possess the necessary features. This final opportunity for a wilderness unit in the Kremmling area should not be lost.

Much is proposed under the "Cultural Resources" section. This is good, it adds another dimension to non-exhaustive use of the public land. People are increasingly interested in their cultural roots.

Regarding Lands and Realty, managers of the public land should be very cautious in reducing the public land capital. Remember that future generations own it too. They will probably value it more highly than we of the present generation. Once lost, it like wilderness is lost forever.

Land transfers to other federal agencies preserves the national public's ownership. Land transfers to

agencies at all other levels does not.
A loss of 620 acres (Natural Environment alternative) is significant. A loss of 16,897 acres (Preferred Alternative) is not in the public land interest!

Under "Transportation and Access" heading, isn't it odd that for a "Natural Environment alternative five times as much acreage is requested for access for timber cutting as for recreation? And isn't it even more odd that one of the listed timber areas, Drowsy Water, was withdrawn from consideration as a WSA because those passing judgment said it was too roaded for such use?
I was among those who argued strongly for the Drowsy Water area being given WSA status. Since the troublesome WSA is the only remaining possibility for wilderness designation in the Kremmling BLM area such designation is increasingly important.

115 In addition to filing for water rights for livestock and wildlife, consideration should be given to water needs for campsites and picnic areas.

Off-road vehicles were discussed (or was it cussed?) above. But for emphasis, let's repeat two points. First, if we are truly concerned about energy self-sufficiency, it will not be attained by speeding the extraction of finite supplies or by speeding the consumption with encouraged vehicle use.
116 Second, if we are truly concerned about the natural environment, we do not demonstrate such concern by opening 88% of it to vehicle use!

"Future foregone must, however, be weighed against present foregone, ...". Yes, but how is the "weighing" to be done? How much weight is to be given the present, our affluence, our myopia and our high consumption rate? And how much weight is to be given conserving most of our natural environment for posterity?
The decision required considerable cognition, yet perhaps even more, it required considerable courage.

Wishing you well,
Wendell Trunk

May 1, 1983

Area Manager
Kremmling Resource Area
P.O. Box 68
Kremmling, CO. 80459

Dear Sir,

After reviewing the Kremmling Resource Management Plan and Environmental Impact Statement, we are in support of your decision concerning the North Sand Hills as a special recreational management area for recreational vehicle use.

As members of Mile Hi Jeep Club of Denver, CO., we have utilized this area for several organized club activities in the past 4 years. It provides a safe, designated area for all ages to utilize their special recreational vehicles. We have always immensely enjoyed this area.

Sincerely,
L. A. Butler
Mrs. Karen Butler

Mr. Lynn Butler
Mrs. Karen Butler
17414 E. Ford Dr.
Aurora, CO. 80017

conoco

E. Fred Birdsall
Public Lands Coordinator

Conoco Inc.
555 17th Street
Denver, CO 80202
(303) 575-6123

May 3, 1983

Harold Belisle
BLM - Kremmling R.A.
P. O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

Your Kremmling draft RMP/EIS is just excellent. Both in form and content it approaches the balance long sought in giving energy/minerals disciplined and equitable attention in the decision process. I can think of no negative comment, and I endorse your "Preferred Alternative".

It is evident that much thought and work went into the preparation of this RMP/EIS. It was time well spent.

* * *

I borrowed a copy of the Kremmling RMP/EIS but would like to have a personal copy. Could you arrange to have one sent?

Yours very truly,

Fred Birdsall
E. Fred Birdsall

jil
cc:
George Francis, State Director
BLM
Colorado State Office
1037 20th Street
Denver, Colorado

16

3190 Endicott Drive
Boulder, CO 80303
May 5, 1983

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P. O. Box 68
Kremmling, CO 80459

Dear Mr. Belisle:

Please include this letter in the record of hearings on the Kremmling Resource Management Plan.

I support the seventh alternative, the Natural Environment Alternative, outlined in the Resource Management Plan. This alternative allows appropriate developement while preserving the wild status of the Troublesome Wilderness Study Area.

Sincerely,
David L. Perry
David L. Perry

17

TEXACO
PETROLEUM PRODUCTS

PRODUCING DEPARTMENT
WESTERN DIVISION
DENVER REGION

TEXACO
U.S.A.
A DIVISION OF TEXACO INC
P. O. BOX 2100
DENVER, COLORADO 80201

May 5, 1983

BUREAU OF LAND MANAGEMENT
KREMMLING RESOURCE AREA
DRAFT RMP/EIS

Mr. Harold Belisle
Area Manager
Bureau of Land Management
Kremmling Resource Area
P. O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

Texaco wishes to thank you and the planners for giving reasonable attention to energy and minerals in the above plan. For the first time in this type of planning, there is published, mapped energy and minerals alternative, and the subsurface resource potential is made an equal partner with quantifiable surface resources.

Land use priorities are specifically addressed, potential conflicts are identified, the agency which will resolve the conflicts is identified, and limitations on use are described. In the case of energy and minerals, these limits include restrictions on leases, development plans and proposed stipulations designed to contribute to conflict resolution. In this resource area energy companies will know up front what to expect as the plan is implemented.

Oil and gas leasing is listed as a "compatible use" in each section addressing another land use priority, with the sole exception of wilderness. Environmental protection throughout the plan is still obvious, especially in terms of soil, water quality, threatened and endangered species. The industry has always been able to live with such protections, and we see no unreasonable imposition of restrictions.

It is felt that the oil and gas industry can support either the Preferred Alternative or the Energy and Minerals Alternatives.

17

Mr. Harold Belisle -2- May 5, 1983

Again, let us commend you on a job well done. Thank you.

Very truly yours,

RICHARD W. STANTON
Land Manager

By G. M. Barrow

GMB:JE

18

AMOCO

Roberta Andersen
Public Lands Coordinator

Amoco Production Company (USA)
Denver Region
Amoco Building
17th & Broadway
Denver, Colorado 80202
303-830-4274

May 4, 1983

Mr. Harold Belisle
Area Manager, BLM
P. O. Box 68
Kremmling, Colorado 80459

Dear Harold:

Thank you for the opportunity to comment on the draft RMP and EIS for the Kremmling Resource Area. As you know, Amoco Production Company is a wholly-owned subsidiary of Standard Oil Company (Indiana). Our principal job is exploring for and producing oil and gas throughout the United States.

We especially appreciate the fact that you and your interdisciplinary planning team made the subsurface resource potential a full and equal partner with quantifiable surface resources in your Plan. We fully appreciate the difficulties involved in such planning, and believe that your choice of using the minerals rating system developed by Rocky Mountain Oil and Gas Association to obtain inventory information was excellent.

We also appreciate the ease of identifying the alternative priorities on your color-coded maps. The variety of land ownerships and complexity of understanding the alternatives could have been a nightmare but for another excellent choice for visual presentation.

It is obvious throughout the Plan that compatible uses and environmental protection go hand in hand. Our industry has shown that it is more than willing to cooperate with environmental protection laws, regulations, and stipulations; your plan shows an understanding and acceptance of that fact. Oil and gas exploration and development do not do long-term, irreparable environmental damage, and reclamation is built into our cost of doing business.

We support either the preferred alternative or the energy and minerals alternative. We support your recommendation in 6 of the 7 alternatives that the Troublesome WSA is unsuitable for designation as wilderness.

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Mr. Harold Belisle
May 4, 1983
Page 2

Thank you again for the opportunity to participate in the planning for this important resource area.

Sincerely,

Roberta Andersen

RA:ww

19

102 East Gregory #3
Champaign, Illinois 61820

May 5, 1983

Mr. Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle,

I have recently examined the Resource Management Plan/ Environmental Impact Statement (EIS) for the Kremmling Resource Area. As a concerned and interested citizen, I would like to offer comments on this draft document. I will focus my comments on three areas of concern, which are the designation of the Troublesome WSA, impacts for transportation and access area, and the recommendation of a new alternative.

First, I would like to focus attention on the designation of the Troublesome WSA. According to page 240 of the EIS, congress has set three requirements that need to be met in order that an area be recommended as suitable for wilderness designation. The EIS states on page 144 that the Troublesome WSA meets these requirements and that for the Natural Resources alternative, it would be recommended as being suitable for wilderness designation. Yet for all other alternatives (see pages 109,117,123,128,133,&139) a non-suitable for wilderness designation is rendered. What I would like to ask is why is the recommendation given dependent on the alternative selected? Wilderness designation should be self contained and based on the requirements stated in the Wilderness Act of 1964. And surrounding land uses should be based on the wilderness designation, *and not vice-versa!* 135

There are seven reasons stated on the above mentioned pages for the non-suitability of the Troublesome WSA that I would

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like to address. First, there is a statement that the WSA would not be a significant addition due to its size. I would like to ask, how big does an area have to be according to the BLM in order to be a significant addition? Second, the EIS states that its' addition would not significantly expand wilderness opportunities . To this I ask what advantages does a small wilderness area offer to users? Next, the EIS states that the area would not add balance to the geographic distribution of wilderness areas. Why would this be a problem under all alternatives but the Natural Environment one? Next, there is a statement that the Troublesome WSA would not protect an entire watershed or ecosystem. Would the emphasis of the given management plan protect the watershed or ecosystem better than wilderness designation would? Fifth, the EIS states that the area would not provide opportunities for a sustained wilderness experience. How long do wilderness users in this region tend to stay? (According to a Forest Service research paper (PNW-61) by Hendee, Catton, Marlowe, and Brockman (1968), wilderness users in the Pacific Northwest usually stayed 2.3 days at a time.) The sixth reason is a possible future change in the non-wilderness management of adjacent Federal lands. This is countered by the EIS on page 53 where it states that non-wilderness uses on adjoining lands could impact existing wilderness values in the WSA. "However, these non-wilderness uses are subject to environmental laws, such as the Clean Water and Clean Air Acts, which would mitigate any degradation of downstream wilderness values should the area be designated wilderness." (p.53 EIS). I would like to ask what is the likely nature of these possible impact ('s)? The seventh reason is future non-wilderness uses on the private inholding. The EIS counters this in part by stating that activities taking place on the inholding do not impair the areas overall wilderness characteristics. And while activities taking place in the inholding may sometimes affect the solitude on lands immediately adjacent to the inholding, the vast majority of the area is *topographically screened* (and thus not affected). I would like to ask what legal or financial remedies to the non-wilderness uses on the inholding have been

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considered?

According to the EIS (p.109,117,123,128,133,139), at least part of the area will be intensively managed for forest production. It is important to note that only 1872 out of the 7518 acres of forest strata is manageable in the WSA. I would like to ask what impact ('s) would the loss of these 1872 acres of timber production have on the local economy? And in particular, the lumber industry in that area?

At this point I would like to raise concern on the impacts for the transportation and access areas. The draft EIS states that "the present transportation system is adequate to accomplish the management goals for this alternative" and that "Following the RMP, a transportation plan and map would be developed..." . (see pages 119,124,130,135,140,&146). In addition, there is no mention of transportation and access impacts for the no action alternative in the EIS. Basically I would like to ask where is the support data and reasoning to justify the statement that the present transportation system is adequate for that alternative? There needs to be some statement concerning impacts on transportation for the no action alternative. (Will this be addressed in the final EIS?) I would like to ask the following questions concerning impacts. Will there be any impacts on transportation under any of the alternatives? What impacts will occur? Mitigation? Are there any roads that are inadequate to meet the needs of any of the alternatives? Will there be impacts from repairs, upgrading or new road construction under any of these alternatives? Will there be any impacts on water quality, air quality, or visibility as a result of repairs, upgrading, or new road construction required under any of the alternatives? What impacts will the road programs mentioned in the EIS have on the local economy? Employment situation? I think that transportation impacts should be considered at the draft stage of the EIS or at least in the final EIS as opposed to the post final EIS as indicated by the statement that "following the RMP, a transportation plan and map would be developed".

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The last area that I would like to cover is that of the recommendation of a new alternative. A review of the present range of alternatives shows the following:

1. a no action alternative which represents the continuation of the present management
2. the preferred alternative which represents a mix of the energy and minerals, economic benefit, renewable resources, and to an entent, the recreation alternatives. The real emphasis of this alternative appears to be that of sustained cash flow
3. a energy and minerals alternative that "emphasizes the exploration, developement, & transportation of energy and other critical mineral resources on Federal lands within the resource area"
4. an economic benefit alternative that "emphasizes the management and production of all public lands resources that would benefit local and regional economies"
5. a renewable resources alternative that emphasizes the management, production, and use of the renewable resources on public lands in the resource area"
6. a recreation alternative that emphasizes "providing for and managing recreational opportunities and ensuring the availability of public lands to meet recreational needs"
7. a natural environment alternative that emphasizes the "protection and enhancement of the natural environment within the resource area"

Within the full spectrum of alternatives there is one that would provide a better mix of the preferred, recreation, and natural environment alternatives. This alternative would provide a balance between the preferred, recreation and natural environment alternatives. This is the new alternative that I an recommending.

The specifics of the new alternative are as follows. For the resource of locatable minerals the new alternative would place in effect those surface restrictions necessary to protect senic, wilderness, and environmentally sensitive areas. This

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represents a change from the preferred towards the natural environment. For coal, its' position would be to allow sufficient acreage to allow for continuation and expansion of the coal industry. This represents no change from the preferred. For oil and natural gas, the new alternative would have higher restrictions than those for the preferred. This would be necessary in order to protect senic, natural, and recreation areas. There would be no leasing in the Troublesome Wilderness Area. This represents a change from the preferred towards the recreation and natural environment alternatives. For all items under the resources of livestock grazing, allotment management plans, range improvement projects, and range management implementation costs, the position of the new alternative is the same as that under the preferred alternative as stated in table 3-27 on pages 148-149 of the EIS. This represents no change for these resource items. For forest products, there would be 4.0 million board feet of annual allowable harvest. This represents a .5 million board feet reduction from the preferred. The management intensity would remain the same as is the case for all other alternatives. This represents no change. For the wildlife resource, the value for initial forage allocation, the managed deer, elk, and antelope habitat, miles of stream and riparian habitat improvements, upland habitat, the number of acres of water-fowl/shorebird habitat maintained or improved, and ACEC (T/E species) would be the same as those values represented by table 3-27 on page 150 for the recreation and natural resources alternatives. For the RNA (T/E species), the value would be 1(300 ac). This represents a change from the preferred towards the recreation and natural resources alternatives. This represents an increase in the wildlife forage allocation, an increase in deer habitat, a decrease in the number of ACEC's due to an increase in the number of RNA's from the values for the preferred alternative. All items listed for wildlife represent no change. For wilderness, the Troublesome WSA would be recommended as suitable. This represents a change from the preferred. The position and values for the new alternative are the same as those

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for the natural environment alternative for all other items in table 3-27. This represents a change in values from the preferred towards the natural environment alternative for these resource items. (Please see table 3-27 for a comparison of the changes for these items.)

This new recommended alternative is a reasonable alternative that has not been addressed within the present range of alternatives for this EIS. Will you consider it in the final EIS? I also recommend that it be considered for preferred alternative status!

Sincerely,

Leo G. Masulla

Leo G. Masulla

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SILVER CREEK COLORADO

PO BOX 4001 • SILVERCREEK COLORADO 80446 (303) 267 3554

SILVERCREEK SKI CORPORATION

12 May 1983

Mr. Harold Belisle
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle,

I have just completed reviewing the Resource Management Plan for the Kremmling Resource Area. Your staff has done a very thorough job in analyzing the input and facts and arriving at a preferred management alternatve. I fully concur with the Preferred Alternative and have some suggestions on its scope and implementation.

A- Within the boundaries of the SilverCreek property there are two tracts of BLM ground; 200 acres in Section 9, T1N, R75W, 6th PM Grand County and 320 acres in Section 20, T1N, R76W, 6th PM, Grand County designated as "No Priority". These isolated parcels are immediately adjacent to land recommended for "Community Expansion" and would seem logical for inclusion under this category. These two parcels meet all the criteria of "Isolated Tracts" suitable for disposal under the Preferred Alternative as outlined on Page 118 of the RMP. 166

Also included in Section 9 are 240 acres designated as "Wildlife Habitat". This parcel is surrounded on three sides by property owned by SilverCreek. It is our suggestion that this also be designated as suitable for community expansion. Because this acreage is surrounded by private property and considering the amount of adjacent wildlife habitat I do not feel this designation would adversly effect any wildlife management plans. In addition, this proposed action would simplify some ownership lines within this section 79

which is consistent with pages 117 and 118 of the RMP under the Preferred Management Alternative- "Use Authorizations and Ownership Consolidation".

B- After being involved in the process whereby leases are granted and appraisals of encumbered property are undertaken I am somewhat confused as to the guidelines for determing the value of a lease and the criteria used relating to the surrounding land values associated with the appraisal. A bit more clarification and background information in this regard would be helpful.

Thank you for the opportunity to comment on the Resource Management Plan.

Sincerely,
The SilverCreek Companies

John P. Graves
President
SilverCreek Ski Corporation

Tamara Wiggans
Box 3086
Durango, CO 81301

May 17, 1983

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

Dear Sir:

Last summer I had my first opportunity to visit the Kremmling area and spent an afternoon fishing along the Colorado River. I hope the BLM will manage the resources in the area so that the undeveloped, unspoiled characteristics, so beautifully prevalent in this part of Colorado are maintained.

My specific comments on BLM's Kremmling Resource Area Resource Management Plan are as follows:

The alternatives presented are clear and easy to compare, yet the Natural Environment Alternative (#7) is the one I personally support. The Troublesome Wilderness Study Area (WSA) is the only wild, pristine roadless area in the entire resource area, and the fact that it is inaccessible makes its designation as a wilderness area even more desirable. As urbanization increases nation- and state-wide, and the demand for remote backcountry recreation increases, it is important to keep some areas specifically set aside for future generations to enjoy.

In light of the current depressed timber market, the relative poor quality of Colorado timber, and the long time reforestation requires in the dry Colorado climate, the value of wilderness seemingly far outweighs any potential timber harvest, therefore eliminating the need for damaging roads. Roads would bring in more people and more destruction, in terms of fire danger, wildlife disruption, and litter.

BLM proposes to lease 10% more coal than is presently offered. As Secretary of Interior James Watt has indirect influence over BLM's decisions, the coal leasing proposal comes as no surprise. However, 10% of an increase is too much. Coal mines are closed around the state. Electricity demand and growth rates

are down. Transportation costs for the coal are very high in this area. Too much coal on the market in the past led to depressed prices. The government does not receive fair market value for resources that should be conserved. The public land suffers immense environmental damage, in terms of stripped land and its accompanying water and air pollution. Current levels of coal leasing are adequate. If less money is spent on preparing coal leases, more funds can be spent on badly needed range improvements.

I am also against construction of the Azure Dam project. It would harm the river rafting business, and therefore be detrimental to Colorado's healthy tourism industry, which brings in far more dollars than mining, timber, or agriculture. Dams are too expensive, and their economic benefits are of dubious value. Azure would disrupt local wildlife migration routes, and destroy archaeological resources. The high quality trout fishing would suffer, and besides the irrigation-hydropower plan is currently not needed, and not worth the trade-offs, especially in light of evaporation and silt problems. I expect that close examination of the cost-benefit ratio, and the return on the dollar, will reveal the dam to be too expensive to those who have to pay for it.

One more point: The North Sand Hills Natural Area should remain a natural area. Changing the status to one of "Special Recreation" could result in less restrictive off-road vehicle use. Since there are numerous Indian artifact sites, and of course, the unique sand dunes, the place should remain natural, and not riddled with ORV tracks.

In summary, I support Alternative #7, the Natural Environment Alternative, because it doesn't push for development, and provides better protection for the land and the river, especially Troublesome WSA.

Thanks for the chance to comment. The Kremmling Area RMP is a thorough planning effort, and I only hope that the San Juan Resource Area follows your example, in terms of a clear, well-written document.

Sincerely,

Tamara Wiggans

Tamara Wiggans

May 16, 1983

Area Manager
Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

Dear Sirs:

This letter is to relay our feelings regarding the Northers Sand Dunes.

We are outdoors enthusiasts and 4 wheelers. We also love the mountains and respect them and want to do no harm to the natural wonders. We believe that the northern sand dunes should be left open and see that no harm comes to sand dunes by driving on them. Four wheel drives do not damage this area and we feel that it would be clear cut discrimination to make this area wilderness and let backpackers and horseback riders use it. Our tax dollars support these areas and 4 wheelers pay a tremendous amount to our Government for Forest Service, BLM and other divisions of our government and it is not right that they would close an area such as the san dunes. It is the public's land, we want the right to use it.

We also pack our trash out with us and will pick up after others that are thoughtless enough to litter.

Thank you for listening to our comments and again we want our land left open to us.

Sincerely,

Daniel R. Olson , Adopt-A-Trail Coordinator, State Assn.

D. Linda Olson

members:
Mile Hi Jeep Club
State Association of 4 wheel drive clubs, Inc.
United 4 wheel drive Association

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MEC
MINERALS EXPLORATION COALITION
Minerals Advocate In Public Policy
12640 West Cedar Drive
P.O. Box 15638
Denver Colorado 80215
303/989-5367

May 18, 1983

Harold Belisle
Area Manager, Bureau of Land Management
P.O. Box 68
Kremmling, CO 80459

Dear Mr. Belisle:

These comments constitute the response of the Minerals Exploration Coalition (MEC) to the Draft Resource Management Plan and Environmental Impact Statement for the Kremmling Resource Area. The MEC is a coalition of exploration companies and individuals conducting exploration on federal lands.

In view of the fact that wilderness areas designated after December 31, 1983, will be withdrawn from appropriation under the mining and leasing laws, we believe that all areas with mineral and energy potential should be excluded from wilderness designation, even though no economic deposit is now known. The withdrawal limitations will preclude the collection of new data, and new areas of mineral potential will not be found. With new discoveries effectively stopped, the policy of excluding all currently known mineral potential from wilderness should be followed, so that exploration of these areas will not be restricted and minerals might yet be produced. Explorationists tend to look at the long term because the lead time of discovery may be ten to fifteen years. The impact of wilderness on minerals should be assessed over the long term (a century or more). We believe that land use decisions should be in conformity with the policy statements made in the National Minerals Program Plan and Report to

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Page 2
BLM - Kremmling Resource Area
MEC/5-18-83

Congress released by the President in April, 1982.

The mineral values are given adequate consideration in the preferred alternative for this plan and we support that recommendation.

The Minerals Exploration Coalition thanks you for the opportunity to comment on this Resource Mnaagement Plan and Environmental Impact Statement.

Sincerely,

John D. Wells

John D. Wells
President
MINERALS EXPLORATION COALITION

JDW/th

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ROBERT D. TIPTON, D.D.S.
5735 S BANNOCK
LITTLETON COLO 80120
TELEPHONE 794-5000

May 19, 1983

Dear Sirs,
I would like to say that I am in favor of the preferred alternative for management of the Kremmling Resource area. I would like to see the North Walden Sand Dunes area left open to off-highway vehicle use. I would like to have as many other areas open to ORV use as possible.

Yours
Robert D Tipton DDS
High Country Drifters
Four Wheel Drive Club

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United States Department of the Interior

BUREAU OF MINES
2401 E STREET, NW.
WASHINGTON, D.C. 20241

May 19, 1983

Mr. Harold Belisle
Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

Thank you for the opportunity to review the draft Resource Management Plan and Environmental Impact Statement for the Kremmling Resource Area, Colorado. The Bureau of Mines primarily is interested in impacts on mineral resources and their development; therefore, our comments will be restricted to these aspects of the alternative management plans.

Under the preferred alternative, approximately 45,000 acres of Federal lands would be identified as priority areas for future coal expansion. This potential increase in available coal acreage will be beneficial to future expansion and development in this area. The management of locatable minerals and oil and gas would not change.

The Bureau of Mines would prefer easing leasing restrictions on oil and gas and greater access to locatable minerals. The energy and minerals alternative in the Resource Management Plan would emphasize the exploration, development, and transportation of energy and other critical mineral resources on Federal lands within the resource area and is the Bureau of Mines' preferred alternative.

The draft environmental impact statement contains an adequate description of the mineral situation in the resource area, and we have no additional comments.

Sincerely,

Walter G. Dupree

Walter G. Dupree
Assistant Director
Mineral Data Analysis

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H. K. SCHMUCK
6045 Johnson Way
Arvada, Colorado 80004

May 18, 1983

Area Manager
Kremmling Resource Area
Bureau of Land Management
P.O. Box 68
Kremmling, CO 80459

Reference: Draft Resource Management Plan/Environmental Impact Statement for the Kremmling Resource Area

Gentlemen:

The following written comments supplement those given by me orallly at the April 14,1983 Public Hearing at Golden, Colorado.

At the public hearing I commented that the Preferred Alternate in in the draft EIS,gave a potential of 16,847 acres of BLM lands that would be suitable for disposal under the alternative. It further advised (p. 118) that there were five criteria for determiningwhich lands were suitable for disposal.

Neither Vol. 1 or Vol 2 (maps) identified which lands were being considered for disposal. A marked map showing these lands was displayed at the April 14 public meeting. Upon my request, I have been sent a copy of the southern half of the Resource Area with the lands considered for disposal under the Preferred Alternative suitably marked. Hence, I can now comment on this phase of the Preferred Alternative.

Nevertheless, an objection should be raised that the Draft Statement as published was deficient in not identifying the lands considered as potential for disposal although this data is important in analyzing tha alternatives discussed in the Draft EIS.

I further feel that a breakdown of the locations potentially to be disposed of under the five criteria should be tabulated, i.e. which might be transferred to the Forest Service, to the state, local political entities, private interests, etc. From the marked map it would appear that considerable areas might fall under each criteria. 161

As a former resident and current property owner of 36 years in the Resource area, I am particularly interested in Townships 1S, 1N and 2N in both R76W and R77W. This is the same general area defined as 307 by the Forest Service recently in their proposal for consideration of disposal of Arapaho National Forest lands.

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Draft EIS p. 2 H.K. Schmuck

I do not feel that the BLM lands in the area above that you have outlined as potential for disposal under the Preferred Alternative are basically unreasonable if great caution is taken in their disposal.

I would hope that the approx. 1680 acres around Sheep Mountain would be added to Arapaho National Forest.

Of the remainder, the key shaped parcel of approx 760 acres 9 (circled in red on the enclosed map) lying in a N-S direction in Secs. 5, 8, 17, 20, T1N, R76W is of the greatest concern. If this entire tract should be sold to private interests, it would eliminate public access to a very large area of BLM land which is not under consideration for disposal. The latter includes two miles of the Fraser River. Since public access to public lands is one of the biggest problems in its management, this cannot be allowed to happen. This parcel and the adjoining BLM land support a considerable elk herd which would be driven out with no place to go if it were extensively developed. It also provides a buffer zone within a large scale, high density development now under construction. 80

It, therefore, is absolutely essential that the northern half of this area in Secs. 5 and 8 be either retained by the BLM or be transferred to another public entity who will maintain it as open space. The portion in Secs. 17 and 20 are less critical but the preference is to leave it in public possession.

Regarding Coal, based on 30 years experience with Western mining, I would challenge the statement (p. 82) that coal production will stabilize at 2 million tons per year. This has certainly not been true for 1982 or 1983. With the BLM coal leasing program in place in great quantity in the same trade area and with these areas being of much more favorable production and transportation economics and at least comparable coal quality, it would seem unlikely to make any sort of dramatic "comeback" in th foreseeable future. Hence: it would seem unnecessary to add appreciably to the current leases of which only three of six are under development. This should definitely be the case where a private owner of the surface rights would object to the leasing of the Federal coal below the surface. 31

In view of the above, it appears that an increase from 4,330 acres under current lease to 45,000 acres under the Preferred Alternative is excessive.

Regarding Livestock Grazing, the statement (p 115) is ambiguous, i.e. " In grazing allotments where optimizing for both (livestock and big game) was not possible, livestock production will be favored, while providing sufficient forage to support present (1980) big game populations." 81 82

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Draft EIS p. 3 H.K. Schmuck

Does this mean that if the forage drops below the maintenance level for both livestock and big game, forage for big game will be allowed up to the 1980 population and livestock forage be cut back accordingly? However, if the big game population increased above the 1980 population,would livestock then be given any extra forage thus maintaining the big game at 1980 level and increasing livestock if additional forage becomes available?

The Preferred Alternative is encouraging in reducing the current licensed AUM's by 13% given the overall range condition. However, continuance of the present $1.86 AUM fee compared to a fair market value of $8.83 AUM appears to be an excessive subsidy for ranchers dependent on BLM leases in competingswith those without such leases.

Further if BLM AUM's as a percentage of Area AUM's is in the range of 5%, it would seem that big game could be favored over livestock for forage without undue harm to the Area livestock industry.

On page 79 under Recreation-Limited Management, two of the items of management emphasis are: "1. Providing limited visitor information through signing of access points, public land boundaries or restricted areas. 2. Acquiring public access to public lands with sufficient recreation opportunities where access does not presently exist."

Under Recreation in the Preferred Alternative, these should be spelled out to give emphasis to the preferred Alternative statement as these are two very critical areas now restricting public use of public lands.

Some of this could be solved by the BLM actively and actually signing access points. For example, such a point, which has never been signed, is on Colorado State Highway 125 in Sec 10, T2N, R77W where the highway crosses 40 acres of BLM land giving access to thousands of acres of BLM and NF lands west of 125. Private signs at the ends of the public area give the impression that there is no public access to these lands. 117

Acquisitions for public access should be more actively pursued althogh progress in the past few years has been encouraging.. When rights of way are acquired by purchase through private lands such as for timber removal, these should include the right of public access or public money should not be expended for them.

In another phase of public access, Appendix 4, item 9 "Area: Inspiration Point Flats. Limitations: Road leading from the bench to the Colorado River is restricted to 4-WD vehicles only." Here you are limiting access to the minority who are affluent enough to own and operate a 4-WD vehicle. The road should be improved to handle standard vehicles or closed to all vehicles. 118

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Draft EIS p. 4 H.K. Schmuck

This case is singular compared to the other areas in Appendix 4 because it gives access to the Colorado River. As stated in the general overview in Chapter 1, one of the principal issues developed in the planning process was " availability of access to fishing streams on public lands in the resource area especially to the Colorado River.

Under the Preferred Alternative discussion in Chapter 3, I cannot find any specific reference to vegetation manipulation. I assume this falls under the general category of range management. Appendix 1 details one method of vegetation manipulation as chemical control. This brings to mind terms such as "Agent Orange" that brings this method of control under suspicion. If used, it it must be done with extreme caution and only after consultation with specialists both within and outside of the BLM. Further, it should be the method of last resort. 59

Not in Appendix 1 is a method of vegetation manipulationthat has recently been proposed by the BLM and has received wide publicity. This is the removal of aspen forest to theoretically improve waterr production. This idea should be given the burial it deserves and should be so stated in the EIS.

Very truly yours,

Howard K. Schmuck

Howard K. Schmuck

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UNION PACIFIC RAILROAD COMPANY
DEPARTMENT OF FINANCE AND ADMINISTRATION

1416 DODGE STREET
OMAHA NEBRASKA 68179

May 20, 1983

M-271-4

Area Manager
Kremmling Resource Area
Bureau of Land Management
P. O. Box 68
Kremmling, Colorado 80459

Dear Sir:

We have just reviewed your proposed Resource Management Plan/Environmental Impact Statement (RMP/EIS) for the Kremmling Resource Area and would like to take this opportunity to offer a few comments. While we applaud your efforts to provide for the future energy needs of the nation as well as the economic well-being of the mining and transportation industries serving the North Park Basin, as is evidenced by your recommendation that 45,000 acres of federal coal lands be earmarked for future leasing, we must take strong exception to your remarks concerning Union Pacific Railroad.

On page 82 (fourth paragraph) of the RMP/EIS, you state that: "The Union Pacific Railroad, which extends between Walden and Laramie, Wyoming, is the primary limiting factor for coal development in Jackson County." This statement simply is not true. Certainly, the abbreviated and oversimplified discussion which follows that statement offers no basis for drawing any such conclusion. 181

The basic issue in determining the competitive strength of a coal supply, such as the North Park Basin, is the delivered cost of its coal, in a given market, compared with the costs of competing coals. Delivered cost is the sum of both mining and transportation charges, each of which is a function of myriad influences, many of which lie outside the control of the mining or transportation company. In addition, questions of coal quality, and, most importantly, the strength of the market itself are also critical factors to be considered in determining the potential for production. In summary, the questions of competitiveness and production potential are extremely complex and not deserving of any oversimplification or misrepresentation; therefore, we suggest that you delete the fourth paragraph on page 82.

Union Pacific Railroad stands ready and willing to continue its participation in the movement of coal from the North Park Basin. We look forward to the continued development of its coal resources and feel that your efforts to set aside coal lands for this purpose are a positive step. While coal markets across the country have been soft in the recent past, we see some indications of increasing demand. Adequate reserves of these coals must, therefore, be made available.

With respect to the competitiveness of North Park coal, we feel that efforts must be made on the part of both the mining companies and the Railroad to overcome

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inherent disadvantages (e.g., difficult mining conditions, distance from potential markets, etc.) and to capitalize on inherent strengths (e.g., coal quality, reliable rail service, etc.). From the Railroad's standpoint, the increased flexibility which the Staggers Act has afforded us in the pricing of our transportation services, as well as the ability to enter into transportation contracts, will enable us to be more responsive to market forces.

We hope these few comments will assist you in the revision of your document.

Sincerely,

C. J. Brinton

C. J. BRINTON
Manager - Environmental and
Natural Resource Planning

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May 11, 1983

Area Manager
Bureau of Land Management
Kremmling Resource Area
Kremmling, CO 80459

RE: Resource Management Plan

Dear Sir:

I wish to commend you on your Resource Management Plan that you have recently released. I think that is very well put together. The list of possible uses and intensity of used was very well rounded. I was especially impressed with the inclusion of a Natural Environment Alternative in which you suggested a greater degree of environmental protection than I am used to seeing in other plans.

I recommend that the prefered alternative in the Plan be changed to the Natural Environmental Alternative for the following reasons:

1) Because "the enjoyment and use of the natural environment for present and furture generations, both locall and nationally" is a high priority(page 141).

2) Because visual resources are very important in this area as stated on page 105, "Local people, as well as tourists, expect to see open mountain vistas, cool rushing water, high forested slopes, and vast, rolling sagelands."

3) Because intensive management of the area for timber, coal, minerals, and grazing has a negative impact on water quality, wildlife, and recreation. Most timber sales in Colorado are subsidized. This is poor economics. Coal and minerals are non-renewable resources, hence, they should be extracted at a very slow rate in order to make them last a long time and so that the conservation of them is encouraged.

I would like to thank you for allowing public comments on this Plan.

Sincerely,

Daryl Anderat
1620 So. Clayton St.
Denver, CO 80210

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May 11, 1983

Mr. Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

RE: Kremmling RMP

Dear Mr. Belisle,

I've been a Grand County resident since 1963. Each year sees more roads being built into roadless areas, more dams and diversion structures being proposed and constructed to divert, contain, and otherwise change natural flow patterns of the Western Slope, and more people coming into Grand County to live, visit, and enjoy the many recreation opportunities this county has to offer the people of Colorado and the rest of the United States.

I would like to be counted among those who favor the Natural Environment Alternative of the Kremmling RMP. I truly believe this plan would benefit the people of Grand County and the state the most over the long run. I also believe current levels of coal leasing are more than adequate in light of the overall energy situation. With natural gas becoming more of an industrial energy source, and with large scale leasing programs taking place on other more proven Federal lands, such as those within the Powder River Basin of Wyoming, expanding the leasable acreage in Grand County appears to serve little purpose.

I would also like to go on record as being against the Azure Dam Proposal. The Wolford Reservoir sounds more like a proposal to concentrate on. The Azure would only serve to ruin the only raftable stretch of the Colorado River in Grand County. This is a national attraction for Grand County, which many non-boaters fail to see. I don't think one more reservoir would have the same attraction.

Thank you for the chance to express my views on this subject.

Sincerely,

Dave Boudreaux

Dave Boudreaux

Box 3092
Winter Park, CO

30

May 24, 1983

TO: Area Manager
Kremmling Resource Area
BLM
P.O. Box 68, Kremmling CO 80459

Dear Sirs:
I heartily agree with the Proposed alternative as outlined in the Resource Management Plan/Environmental Impact Statement, Draft Volume 1.
I disagree with any road/trail closure to create any further wilderness.

Thank you.
BOBBY B. KIESS
Bobby B. Kiess
1314 DOYLE PLACE
COLORADO SPRINGS, CO 80915
303-574-3175

Representing:
Gladiator 4 Wheelers
Colo Assn of 4 Whel Drive Clubs Inc
United 4WD association
Colorado Department of Parks & Outdoor Recreation
State Trails Committee
B.K.

31

TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.
12076 GRANT STREET P.O. BOX 33695 DENVER, COLORADO 80233 (303) 452-6111

May 20, 1983

Mr. Harold Belisle, Area Manager
Kremmling Resource Area
Bureau of Land Management
P. O. Box 68
Kremmling, Colorado 80459

Subject: Kremmling Resource Area Management Plan and EIS
Public Comments

Dear Mr. Belisle:

Let me take this opportunity to compliment you and your staff on the Kremmling Resource Management Plan and Associated EIS. Long term policy planning, although difficult, is of great value to all of those who work with public lands. Our staff has reviewed the documents and, rather than commenting on specifics, I will restrict my remarks to a general perspective that I feel needs to be understood with respect to development of electrical transmission corridors.

Since the early 1970s a great deal of change has occurred in our industry relative to routing, construction and maintenance of electrical transmission lines and substations. Whereas lines and substations were once placed along existing road ways for ease of maintenance and construction, appropriate concerns for visual resources now locate facilities in more remote locations, many times increasing access road mileage and construction and maintenance costs. Also, with increased public participation, the locational question of using of public versus private land is always the subject of lively debate. In addition, like the BLM, Tri-State has a stated public purpose and must accomplish that purpose with finite resources.

However, progress is being made. Reclamation plans have significantly increased the use of rights-of-way after construction, visual intrusion is far less, and construction techniques ensure far less disturbance during both construction and maintenance. Additionally, as knowledge and experience increase among the agencies, public and companies a balance of cost and effectiveness is being defined.

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Mr. Harold Belisle
Public Comments
May 20, 1983
Page Two

The value of your management plan, like that of our long range plan, is to define how we obtain the stated goals which we are assigned. The accomplishment of the Kremmling Resource Area Management plan is a significant step toward that end.

Very truly yours,

Donald A. Shanfelt, Supervisor
Environmental Planning

DAS:bve

cc: W. Graw
A. Mander
D. Shafer
K. Myers

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

5/17/83 32

Gentlemen Subject: RMP & Ranches
I would like to compliment the Kremmling Resource Area BLM people on an excellent job of compiling the report.

My family and I own the Parkview Mountain Ranch at Rand, Colorado and we have a vital interest in the possible sale of the small BLM tracts that are now part of our ranch and have been for more than 100 years. These tracts are fenced as part of the ranch and have been used as part of the ranch for a long time with our irrigation ditches and cattle paths crossing them.

We think that it is unfair to ask ranchers, who are already suffering from a national bad cattle market, to borrow more money in an attempt to purchase these small BLM tracts in order to keep their ranches intact. 167

These small, remote tracts without access to any road way, should not be put up for sale if they are part of a working ranch that has kept them for many years.

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Please consider this in your planning and please make it possible for some lands that fit this category to be withheld from public sale

America's greatest asset has been our ability to raise food at a low cost but if we break up the western ranch ~~and~~, as we now know it, this situation could surely change.

Sincerely
Jim DeLine
Parkview Mountain Ranch
Box 36
Rand, Colo. 80473

33

GRAND COUNTY BOARD OF COMMISSIONERS

LORENE LINKE
District I, Granby 80446
W. A. (BILL) NEEDHAM
District II, Granby 80446
HERBERT A. RITSCHARD
District III, Kremmling 80459

COURT HOUSE, HOT SULPHUR SPRINGS, COLORADO 80451
PHONE: 303-725-3376
303-725-3347

S.R. (STAN) BROOME
County Manager

MEMORANDUM

TO: Area Manager
Kremmling Resource Area
P. O. Box 68
Kremmling, CO. 80459

FROM: Grand County Board of County Commissioners

DATE: May 23, 1983

RE: Draft Resource Management Plan and Environmental Impact Statement on the Kremmling Resource Area

The Grand County Board of County Commissioners are pleased to comment upon the referenced Draft Report.

The Bureau of Land Management should be advised that Grand County has enacted the following land use regulations applicable to all projects constructed on Bureau of Land Management lands within the jurisdiction of the referenced report:

- Subdivision Regulations
- Subdivision Exemption Regulations
- Zoning Regulations
- Planned Unit Development Regulations
- Grand County Administrative Regulations for Major Extensions of Existing Domestic Water and Sewage Treatment Systems (Pursuant to HB 1041)
- Fraser Valley Comprehensive Land Use Plan
- Grand County Comprehensive Plan
- 1979 Uniform Building Code
- 1979 Mechanical Code
- 1979 ICBO Plumbing Code
- 1979 Abatement of Dangerous Buildings Code
- 1979 Uniform Building Code Standards

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COMMENTS
Draft Report - Kremmling Resource Area
May 23, 1983
Page Two

These land use regulations must be applied to any proposed projects on Bureau of Land Management land as a matter of Colorado and of Federal law. In particular, the Federal Land Policy and Management Act of 1976 requires "compliance with state standards for public health and safety, environmental protection and siting, constructing, operation and maintenance of or for rights-of-way for similar purposes in those standards are more stringent than applicable federal standards", 43 U.S.C., Section 1765. The National Environmental Policy Act similarly requires that in the environmental assessment of projects which will have an impact upon the environment, the federal government must, "in cooperation with state and local governments . . . use all practicable means and measures . . ." to protect the environment. 42 U.S.C., Section 4331(a). The federal regulations implementing NEPA require involvement of state and local authorities. See, e.g., 40 C.F.R., Sections 1501.2(d)(2); 1501.5(b), (d); 1501.7(a)(1) and 1505.2. Finally, the B.L.M. has formalized its responsibility to recognize county regulations in the "Memorandum of Understanding", dated April 10, 1979. The County's right to recognition of its land use regulations was recognized by the Federal District Court for the District of Colorado in City and County of Denver, et al. v. Robert Bergland, et al., 517 F. Supp. 155 (D. Colo., 1981), aff'd in part, rev'd in part on other grounds, Case No. 81-1852 (10th Cir., December 9, 1982).

The County requests that compliance with the referenced Land Use Regulations be recognized in the final report and that compliance with those regulations be made a part of any federal permit for use of any portion of the federal lands involved. Grand County also requests that the final report provide for notification of the County prior to the issuance by B.L.M. of any oil, gas and mineral exploration permits. 2

Grand County supports the Preferred Resource Management Plan Alternative found in the subject document. The recreation portion of Preferred Alternative indicates that the Upper Colorado below Kremmling will continue to be managed as a Special Recreation Management Area. The plan indicates that Little Gore Canyon should be protected for floatboating use and Grand County supports that conclusion.

Grand County has also been asked to comment on lands which have been identified for possible disposal by B.L.M. We hereby request that Grand County be notified of specific transfers prior to their conveyance by B.L.M. This notification will allow Grand County time to submit comments as to compliance with the regulations cited herein. 168 In addition, the County requests that federal lands within and adjacent to the area proposed for the Wolford Mountain Reservoir be retained by B.L.M. for future recreational and water storage use. 169

If there are any questions concerning the aforementioned comments please contact the Grand County Managers Office at the Courthouse.

Sincerely,

GRAND COUNTY BOARD OF COUNTY COMMISSIONERS

W. A. Needham,
Chairman

34

Jim and Nancy Yust
Box 246
Kremmling, Co. 80459

Area Manager
Bureau of Land Management
P.O. Box 68
Kremmling, Co. 80459

Re: Area RMP/EIS

Dear Sirs:

After study of your proposed plans and alternatives we generally feel your "Prefered Alternative" is the best. For the area in which we are involved, we highly approve of the parcels you have designated as "Protected", presumably for the benefit of Eagles.

Our great concern and objection is that you have not acknowledged in any of your plans our long standing notice of desire to trade lands which would give all parties concerned far more value than is possible under the present arrangement of ownership boundaries. To be specific, your office has on file our proposal which would result in an increase of some three miles of B.L.M. riverfront and fishing access on the Blue and Colorado Rivers near Kremmling, which is of far greater public value than two thousand acres of scrub sage brush where there is an almost nonexistant population of wildlife (deer, sagehens, etc.). Of the thousands of fishermen, hunters, B.L.M. employees and land owners we have contacted in the last 30 years, we have found no one who felt that lands with lousy soil, poor or non-existant access, no water, little wildlife and poor grass should be retained in public ownership when land with far greater public value could be obtained. 170

For many years we have allowed the public to go fishing on the private land we would like to trade to the B.L.M. So everyone concerned, except us - the landowners, already enjoy the benefits a legal land trade would bring.

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Perhaps this is why the B.L.M. hesitates to change the present situation concerning these lands. We feel however, that we have waited patiently for quite a few years to deal with the B.L.M. on this matter; and we feel our proposal deserves serious and immediate consideration. Please consider this letter notification that unless we can come to some mutually agreeable terms for trade of said land with the B.L.M. that we will in the near future refuse further use by the public of our private lands now open to public fishing.

As to minerals in our area, your map code is wrong: there are no minerals there in exploitable quanities. 28

Sincerely,

Jim and Nancy Yust

35

AL WAHL Planning Consultant

4505 Eldridge Street
Golden, CO. 80401 279-3884

May 24, 1983

Mr. Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colorado 80459

Subject: Resource Management Plan/Environmental Impact Statement (draft)

Dear Mr. Belisle:

Of the seven alternative plans presented the Natural Environment Alternative seems to be the more desirable, even handed and enlightened. The alternate provides more opportunity for flexibility. This plan does not drastically impact the present status socially or economically, but allows for a more reasonable and controlled use of our national resources. I would like to commend the people that prepared the Management Plan Document. I feel it is a high order, covering and analyzing the probable results of several courses of action or inaction.

The plan maps are far less comprehensible. I realize that to graphically present all of the physical and environmental factors that infringe on any given area would be difficult to portray. One must assume that the same dedication and thoroughness will be devoted to the implementation in the future use of our public lands as were evidenced in the written document.

I have special interest in two areas: the Sand Hills and the WSA. ORV use in the Sand Hills can have nothing but a negative impact. Regardless of which alternative is finally accepted, ORV use should be prohibited. Please refer to "Off-Road Vehicles on Public Lands" prepared by the Council on Environmental Quality 1979. This publication I believe should appear in your Bibliography. 119

As regards the WSA, you have not made a very good case for not recommending it for wilderness designation. If the area has acceptable wilderness attributes these are not lost or changed simply because there is a different heading at the top of the page. You have not indicated any loss of any resource or economic benefit by recommending non wilderness.

Due to the inaccessibility and difficult terrains, commercial timber harvest could receive no serious consideration. The damage of logging activities would lead to unacceptable damage to the water shed. 74

As regards cattle grazing for the area, wilderness would not preclude this use. Range management structures of course could not be installed, but you do not indicate to what extent range carrying capacity could be increased by implementation of range management. Such range management practices 60

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Mr. Harold Belisle
Page 2

might well be more productive elsewhere. This WSA area if unmolested will continue, as in the past, to provide man with clean water for his irrigation, game for his hunting, solitude for his recreation, beauty for his inspiration, clean air for the dilution of his polution, and various plant, animal and land forms in their natural setting for his study on enrichment.

This WSA area should be retained in its present form by whatever method is appropriate, Wilderness, WAS or no action. Nature has taken good care of the area, lets let it continue. Man can not help, only protect, any modification by man will only lead to the need for more modifications being required to offset the results of previous manipulations.

Sincerely,

Al Wahl

Al Wahl

AL/mc

38

1030 Pearl #9
Denver, Colo.
May 24, 1983

Mr. Harold Belisle, Area Manager
Kremmling Resource Area
Kremmling, Colorado

Dr. Mr. Belisle:

I am writing to express my thoughts on the Draft Resource Plan and Environmental Impact Statement for the Kremmling Resource Area. I ask that my comments be made part of the record.

First, I would like to commend you and your staff for writing a solid, comprehensive EIS. It covers the possible impacts of the alternatives pretty thoroughly, yet it is not difficult to read for the average person. This is a major improvement over many other EISs that I have read. I believe the EIS could be made even better by clearing up the confusion in the headings and subheadings in Chapter 3. It is sometimes difficult to find the start of the analysis for each alternative. Nevertheless, I am pleased with the overall quality of the EIS.

As for the management proposed under the preferred alternative, I favor a wilderness recommendation for the Troublesome WSA. This area remains relatively untrammeled by man and is therefore suitable for wilderness. The use of and demand for wilderness is rising rapidly, thus more wilderness is needed.

In the preferred alternative, the allowable cut is 4-5 MMBF (p. 116). This is close to the long-term sustained yield level of 5.1 MMBF (p. 94). Is there a need to cut this much timber, especially since none was sold from BLM land in the area in 1979 and 1980? 75

I also object to the preference given to livestock over wildlife in the allocation of forage (p. 115). With increasing development in the area, wildlife winter range has become increasingly scarce. The BLM must take this into account in its management plans. 61

Other than the above-mentioned points, I find the proposed plan to generally be acceptable. I appreciate this opportunity to comment.

Sincerely,

Rocky Smith

Rocky Smith
1030 Pearl #9
Denver, Colo.
80203

Chevron
Chevron U.S.A. Inc.
700 South Colorado Blvd., P. O. Box 599, Denver, CO 80201

Richard T. Hughes
Staff Analyst
Legislative and Regulatory Affairs

May 24, 1983

Draft RMP/EIS
Kremmling Resource Area

Mr. Harold Belisle
Area Manager
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

We would like to compliment your planning team on their ability to provide even-handed treatment of all resources, including energy and minerals, which are represented in the Kremmling Resource Area. Particularly commendable is the planning documents clear display of the variety of land uses and the criteria for conflict resolution under each alternative.

Even though we are not currently active in the Kremmling Resource Area, we are pleased to see a Draft Plan which recognizes the importance of energy and minerals, and attempts to make a realistic accommodation of exploration and production activities.

Sincerely,

Richard T. Hughes

RTH/cgf

STATE OF COLORADO

COLORADO NATURAL AREAS PROGRAM
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, Colorado 80203
Phone (303) 866-3111

Richard D. Lamm
Governor

Hamilton J. Barry III
Acting Executive Director

Carol J. Pfannmuller Ph.D.
President, Director

Colorado Natural Areas Council

Eric Kelly Jr.
Chairman

Theodore J. Colburn
Vice-Chairman

Richard C. Bretthauer
Colorado Board of Parks and Outdoor Recreation

Sue Cannon
Member

Rowena Rogers
State Board of Land Commissioners

James T. Smith
Colorado Division of Wildlife

Olin Wertz
Member

May 23, 1983

Mr. Harold Belisle
Kremmling Resource Area Manager
Bureau of Land Management
P.O. Box 68
Kremmling, CO 80459

Dear Harold:

The Colorado Natural Areas Program (CNAP), Colorado Department of Natural Resources, offers the following comments on the "Draft Resource Management Plan and Environmental Impact Statement on the Kremmling Resource Area" for your consideration. We compliment you on the thorough review of the important resource management issues in the Kremmling Resource Area.

As you know, the Colorado Natural Areas Program identifies and cooperatively protects and monitors natural areas in Colorado which contain rare or quality examples of terrestrial or aquatic ecosystems or geological features; or habitats for rare species of plants and animals. Qualified sites are identified through the Program's Natural Heritage Inventory and other sources. Identified sites are evaluated through a registration process. Registered sites are protected as designated Colorado Natural Areas upon the signing of a voluntary cooperative agreement between the public or private landowner and the State.

The Colorado Department of Natural Resources and the Bureau of Land Management have an existing Memorandum of Understanding (MOU) which describes a process for the identification, registration, and designation of those areas managed by BLM which qualify as state natural areas (e.g., possess unique natural characteristics of statewide or national significance). In addition, CNAP and the U.S. Fish and Wildlife Service have a cooperative agreement under Section 6 of the Endangered Species Act authorizing CNAP as the state agency responsible for plant conservation efforts.

To date, CNAP has registered seven sites and designated two Colorado Natural Areas on BLM lands under the provisions of the MOU. One of the registered sites, the North Park Site, is in the Kremmling Resource Area.

Mr. Harold Belisle
Bureau of Land Management

May 24, 1983
Page 2

Our comments on the DEIS include the following issues: 1) designation of the registered North Park Site as a BLM Research Natural Area; 2) identification and possible future registration by the Natural Areas Council of the Kremmling Cretaceous Ammonite site; 3) consideration of "sensitive" plant and animal species in preferred alternative planning; and 4) the Troublesome Wilderness Study Area.

The North Park Site
The Colorado Natural Areas Program urges that, in the final Kremmling Resource Management Plan, BLM designate the entire 310 acres of the BLM North Park Site as a Research Natural Area (preferred alternative, page 169); and include a special habitat management plan for the site. 105 106

The North Park Site was registered on October 1, 1982 as a natural area through the Colorado Natural Areas Program with the cooperation of the BLM, because it provides important habitat for Phacelia formosula, a federally endangered species of plant. P. formosula was listed by the U.S. Fish and Wildlife Service, U.S. Department of the Interior on September 1, 1982 (published in the Federal Register Vol. 47 #170 pp. 38540-38543). The 310 BLM acres, along with 30 adjacent privately owned acres, contains approximately 50 percent of the known individuals of this species in the world. P. formosula is only known to occur in Jackson County, Colorado.

The property also contains a quality occurrence of a Needle and Thread Montane Mixed Prairie (Stipa comata) community, and sandstone bluffs of the Coalmont Formation which are associated with the endangered species. The primary concern for protection of the site is the long term protection and conservation of the endangered species.

We recommend BLM designation of the site as a Research Natural Area because such a designation will provide greater habitat protection to insure long term conservation of the endangered species and the genetic diversity within the species, thus best meeting the objectives of both the federal Endangered Species Act and the Colorado Natural Areas Program. Research Natural Areas (RNA) are "established and maintained for the primary purpose of research and education" (43CFR 6225.0-5). RNAs can include areas of unusual floristic types and preserves and for rare and endangered species of plants. RNA designation will encourage necessary ecological research to be performed . The rarity of this endangered species heightens the need for both protection through restrictive land uses, and research on the ecological characteristics of the species to better ensure its survival over the long term.

Mr. Harold Belisle
Bureau of Land Management

May 24, 1983
Page 3

Kremmling Cretaceous Ammonite Site
The Cretaceous Ammonite Site contains exceptional fossils of giant ammonites (Placenticeras spp.) in the Pierre Shale of the Mesa Verde Formation. The ammonites are as large as one meter in diameter. The unusual concentration of ammonites on this site may have resulted from a catastrophic single event which caused a massive die-off of the ammonites--an interesting paleontological question. The site is currently being studied by the University of Colorado Geology Department and is widely recognized as an important paleontological site in Colorado.

The ammonite site is being reviewed by CNAP for possible placement on the Colorado Natural Areas Registry. It appears that the site deserves more protection from vandalism and other destructive practices. CNAP anticipates requesting permission from the Craig District Manager to register the site in the near future.

CNAP urges that BLM include a description of the site, its significance, and specific management criteria for it in the Kremmling Resource Management Plan. Such criteria might include fencing, controlled acess, or other management prescriptions for scientific research and educational use. CNAP's preliminary review indicates that the ammonite site may be eligible for either an ACEC or an RNA designation. 150

Part of CNAP's review of this site will include a meeting between BLM, University of Colorado researchers, and CNAP to discuss the scientific and educational merits of the site, and future plans for this site.

Sensitive Plant and Animal Species in Preferred Alternative Planning
BLM's "Threatened, Endangered, and Sensitive Plant Species Policy" for Colorado specifies that candidate species (species not officially listed but undergoing status review or proposed for listing) and plant species of special concern (plants which are considered rare in Colorado and represent important elements in the natural diversity of Colorado) should be considered in the Resource Management Plan process. Therefore, USFWS Category 2 plant species and BLM sensitive plant species (Table 2-11, p. 42) should be included in all identified alternatives in the discussion of Chapter 4; Environmental Consequences -- Wildlife and Threatened/Endangered Plants and Animals (pp. 148-171). 104

We support the "natural environment alternative" as the best alternative for balancing the protection and preservation of threatened, endangered species and their habitats.

Mr. Harold Belisle
Bureau of Land Management

May 24, 1983
Page 4

Troublesome Wilderness Study Area

CNAP recommends wilderness designation of the Upper Troublesome Wilderness Study Area by BLM, predicated on our support of further study by the Forest Service of the Troublesome-Arapahoe Creek Area for wilderness designation and the interim management of the area by the Forest Service as a primitive area. The BLM Troublesome WSA is contiguous to the Forest Service lands and has similar ecologically important characteristics. The Troublesome area deserves wilderness protection due to the relatively large, undisturbed ecosystems which contain important elk and deer habitat and unusual opportunities for "below timberline" wilderness experiences. 136

This rugged and scenic area does not have access roads. However, the roadless area will be jeopardized by the building of public access roadsand logging activities recommended by BLM in the DEIS "preferred alternative". Timber harvest in the northwest part of the Troublesome WSA will likely be economically marginal due to the steep and rugged terrain and may damage the fragile ecology of the area.

CNAP urges BLM to seriously consider additional management options for protecting the unique natural characteristics of the Troublesome WSA during the interim study period in the event that wilderness designation does not ultimately occur. If further study by the Forest Service indicates wilderness designation for Troublesome-Arapahoe Creek, BLM's Troublesome WSA should logically be considered in the same unit. However, if wilderness designation does not occur, we recommend that BLM consider designation of the BLM Troublesome WSA as an Area of Critical Environmental Concern (ACEC). An ACEC designation provides for a range of multiple use activities, including "specified kinds and degrees of development and commodity-production activities, provided that important environmental resources within the area are not damaged or endangered" (ACEC, Policy and Procedures Guidelines). The Troublesome WSA qualifies for ACEC designation due to the special management required to protect and prevent irreparable damage to important scenic values, wildlife resources, and exemplary ecosystems of statewide significance.

The Colorado Natual Areas Program will cooperate with BLM on the BLM designation of the North Park Site (as an RNA or an ACEC), on the hopeful eventual designation as a State Natural Area; the evaluation of the identified ammonite site as well as other identified paleontological sites; and the evaluation of management options for the Troublsome WSA.

Mr. Harold Belisle
Bureau of Land Management

May 24, 1983
Page 5

We appreciate the opportunity to comment on the Kremmling RMP. Thanks for the help you and your staff have given the Natural Areas Program. We look forward to working with you in the future. If you need additional information, please contact me.

Sincerely,

Carse

Carse Pustmueller, Ph.D
Director, Colorado Natural Areas Program

Meyring Livestock Company
HEREFORDS - REGISTERED PERCHERON HORSES

BOX 367
WALDEN, COLORADO 80480

Oliver 723-4230
Jerry 723-4547
Dave 723-4230
Dan 723-6949

May 20, 1983

Area Manager, Kremmling Resource Area
Bureau of Land Management
P.O. Box 68
Kremmling, Colo 80459

Dear Sir:

Enclosed please find a copy of a BLM map showing land ownership on which I have circled in black eight different parcels of BLM land that we believe should be identified for disposal by the BLM in the final draft of the Resource Management Plan for this area. These tracts are located in: T5N R80W, T5N R80W, T5N R81W and T6N R81W in Jackson County, Colo. 171

All tracts are small and surrounded by private land. The one parcel which is not completely surrounded is the S½ SE¼ and NE¼ SW¼ S18, T6N, R80W. This is part of a larger parcel which is completely surrounded by private land and in aggregate meadowlands where all of the water is owned and controlled by the owners of the surrounding private land, thus we believe the BLM has no reason to manage the above mentioned parcel of land.

Sincerely, Meyring Livestock Co
by Lukas Meyring

WE RAISE TOP QUALITY FEEDER CATTLE — WHERE THE ROCKIES RIDE HERD

DAVIS, GRAHAM & STUBBS
ATTORNEYS AT LAW

GREGORY J. HOBBS, JR.

2600 COLORADO NATIONAL BUILDING
POST OFFICE BOX 185
DENVER, COLORADO 80201

TELEPHONE 303 892 9400
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CABLE DAVGRAM, DENVER

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1020 19TH STREET, N. W.
WASHINGTON, D. C. 20036
TELEPHONE 202-822-8660
TELECOPIER 202-293-4704

May 24, 1983

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P. O. Box 68
Kremmling, Colorado 80459

Re: Comments on Draft Environmental Impact Statement, Resource Management Plan, Kremmling Resource Area

Dear Mr. Belisle:

We submit these comments on behalf of the Municipal Subdistrict, Northern Colorado Water Conservancy District.

On April 30, 1980, the Municipal Subdistrict entered into the Windy Gap Settlement Agreement with the Colorado River Water Conservation District, the Board of County Commissioners of Grand County, the Northwest Colorado Council of Governments, Middle Park Water Conservancy District, and a number of other governmental interests, corporations, and persons in Grand County.

The Settlement Agreement requires the Subdistrict to use its best efforts to construct the Azure Reservoir and Power Project. The signatories agreed to support the Subdistrict in obtaining the necessary permits and licenses for the Azure project. The Windy Gap Settlement Agreement is contained in the Final Environmental Support Statement for the Windy Gap project, which you should have in your possession, having been an agency from which a right-of-way grant was obtained by the Subdistrict.

Because the Azure Project appears to be feasible, the Subdistrict on April 6, 1983 submitted to the Federal Energy Regulatory Commission an application for license to build the Azure Project. The Subdistrict, after consultation with the Colorado River Water Conservation District and Grand County, among others, decided not to proceed with the high Azure alternative.

The Azure dam, which the Subdistrict proposes to build, will be located at the upper end of the lower Gore Canyon on the mainstream of the Colorado River. The reservoir will reach to elevation 7006.0 feet and have a volume of 23,000 acre-feet of water. A smaller reservoir, with at least 8,000 acre-feet of pumped

storage capacity will be located in the Trough Valley, on a divide between the Colorado and Blue Rivers at about elevation 8,300.0 feet. A plant with 800 MW generating capacity will be installed to produce peaking power from pumped storage between the Azure and Trough Valley.

The Azure Project will result in approximately 15,000 acre-feet of water storage capacity for use on the western slope. The remainder of storage capacity in the two reservoirs will be needed for dead storage and power production purposes. There will be no run of the river power plant built into the Azure dam.

Daily water level fluctuations in Azure Reservoir could be up to twenty feet. Fluctuations in Trough Valley could be up to fifty feet.

The Azure Project will provide the equivalent of 11.3 hours of generation daily at 800 MW capacity. Transmission lines, which also may involve the use of some BLM levels, will be required from the Azure site to suitable inter-connection points.

During certain times of the year, the Azure Reservoir may by-pass flows of as low as 200 cfs. During most times of the year, due to downstream calls, by-passes would be higher, assuming that the operation of Green Mountain Reservoir continues as it has in the past.

An extensive environmental report accompanies the FERC license application, and Subdistrict anticipates that FERC will prepare an environmental impact statement. Float boating will be affected to some extent by the project. However, the Subdistrict has also proposed mitigation which should allow intensive management of the area, in order to preserve significant recreational opportunity, including float boating.

The Subdistrict intends to work with the Bureau of Land Management, and other interested organizations and persons, to refine a plan whereby the water conservation and hydroelectric potential of the Azure site can be realized, while recreational benefits are made as compatible as possible.

The Azure site has been the subject of water resource and power planning since at least the turn of the century. It is one of the best undeveloped pumped storage locations in the United States. We believe that the draft environmental impact statement does not give sufficient recognition to the water conservation and hydroelectric potential of the Azure site, or the energy or income it will produce.

Enclosed herewith is the FERC license application, including the environmental report, for discussion and use in preparation of your final Resource Management Plan and EIS.

We urge BLM to reject the recreation and natural environment alternatives and to adopt the preferred alternative with an expanded discussion of the Azure Reservoir and its benefits and impacts, together with a plan to manage the area in consonance with the Azure Project. In view of the fact that the license application is now being processed, we ask that you not adopt policy or management plans which would adversely affect development of the Azure site for its hydroelectric and water conservation potential. A balanced plan for multiple use of BLM lands in the area should include construction and operation of the Azure Project.

Sincerely,

Gregory J. Hobbs, Jr.

GJH:mb
Enclosure

BY HAND DELIVERY 5/25/83

cc: Board of Directors, Municipal Subdistrict,
Northern Colorado Water Conservancy District

Mr. Larry Simpson

May 25, 1983
Box 252
Kremmling, CO 80459

Harold Belisle, Area Manager
BLM Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

Mr. Belisle:

I am writing in regards to the Resource Management Plan/Environmental Impact Statement for the Kremmling Resource Area. Of the 7 alternative management plans presented, I prefer #5, "Renewable Resource Alternative".

SPECIFIC COMMENTS

Wildlife Impacts

My major concern with all management alternatives involves proposed modification of the sagebrush ecosystem to increase forage production for livestock and the impacts on wildlife, particularily deer and elk. First, I applaud the BLM for requiring that treated areas be rested from livestock grazing for 2 growing seasons following treatment. This is an essential requirement if such manipulations are to produce a return on the investment. In the past, manipulation of sagebrush has meant eradication of sagebrush. Herbicides have been applied in June when sagebrush is most susceptible. Unfortunately, forbs are extremely sensitive to herbicide also during June. Forbs are an important component of deer and elk diets--especially deer--along with sagebrush and grass. To resolve the conflict between livestock and wildlife production, spraying of sagebrush should take place early in May prior to forb emergence. Research has shown that sagebrush is susceptible to herbicide during this time, and although only a partial kill is obtained, grass production does increase and forbs are protected. Such early spraying would benefit both livestock and big game, reduce friction between the 2 industries, and if employed, more areas might be treated to an even greater benefit to the livestock industry. With sagebrush being continually eradicated on private lands, the forage mix on public lands becomes even more important to big game. The BLM recognizes the importance of the sagebrush ecosystem to big game (pg. 104) and should take the approach of managing these lands as mixed ungulate grazing systems.

Partial kills of sagebrush are likely less detrimental to sage grouse. I take exception with the assessment that sage grouse habitat and populations in Middle Park are in good condition (pg. 100). Strutting grounds in the Muddy Creek drainage have declined in numbers of attending birds potentially as a result of large acreages of sagebrush that were sprayed in 1977.

In Appendix 4, areas are noted wherein vehicles would be excluded because of potential harassment of wildlife. I do not agree with the concept of "snowmobiles excepted". Persons on snowmobiles can seriously harass wildlife. Snowmobiles should not be excepted and where necessary, snowmobile corridors should be demarcated (existing roads) to restrict these machines to a narrow corridor when passing through deer and elk winter ranges. 83

I find the distribution of lands committed to wildlife, as noted on the "Renewable Resource Alternative Map", very disturbing. Many of the areas committed to wildlife are small, isolated tracts within private lands, such as: west of the Blue River and north of Spring Creek, Tyler Mountain, Slide Creek and Slide Mountain, and Coal Mountain. These lands cannot in reality be committed to wildlife as they are not fenced to control domestic livestock grazing and thus the BLM cannot effectively improve these areas for wildlife. These lands are at the mercy of private landowners. What is really disturbing is the exclusion of lands committed to wildlife (mainly deer and elk) in known critical areas, such as: Gunsight Pass, Antelope Pass, Wolford and Little Wolford mountains, Red Mountain, Parshall Divide, Mt. Bross, and Cedar Ridge. The distribution of lands committed to wildlife and the acreages involved are very misleading as to the real impacts such commitments would have on wildlife. 84

Land Sales, Exchanges and Cooperative Agreements

I am not in favor of selling large acreages of public land. However, there are instances where exchanges of land between public agencies or between the public and private sectors can be beneficial to land management and to the resources. I urge the BLM to maintain all public lands along streams and rivers in public ownership. These areas are extremely valuable to the public for recreation. I also urge the BLM to seek land exchanges or easements that will further expand the publics' access to rivers.

Lands where the BLM will exclude livestock grazing in cooperation with the Colorado Division of Wildlife are noted on page 78. To these areas the BLM should add the BLM land on and around Junction Butte, T1N R80W. 85

General Comments

As a local resident, I would like to see more emphasis placed on protecting cultural sites. For instance, the tepee rings north of Antelope Pass could be easily fenced to prevent vehicles from driving onto the site. Also, I am against the AZURE project and believe this area of the Colorado River is more valuable to the public for recreation than for production of electrical power. I also urge the BLM to promote, and if necessary force common utility corridors to prevent the unecessary spider-web effect that is now evolving with proposed power lines, gas lines, etc. 151

Thank you for the opportunity to comment on the future management of our public lands.

David J. Freddy
Kremmling Resident
Professional Wildlife Biologist

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kerr coal company

box 7 steamboat springs, colorado 80477 - (303) 879-3[illegible]
773457 7310

May 25, 1983

Mr. Harold J. Belisle
Area Manager
Bureau of Land Management
Post Office Box 68
Kremmling, Colorado 80459

RE: Comments/Kremmling Resource Area/RMP-DEIS

Dear Mr. Belisle:

Enclosed with this letter are comments which resulted from our review of the Kremmling Resource Area, Resource Management Plan - Draft Environmental Impact Statement.

We at Kerr Coal Company commend you and your staff on the thorough and comprehensive nature of the document. We believe that with appropriate public and industry input, the final Environmental Impact Statement will be an effective tool in the management of the public lands in the Kremmling Resource Area for many years in the future.

If we can be of assistance to you in the ensuing development phases of the Final Environmental Impact Statement, please don't hesitate to contact this office.

Sincerely,

David R. Gossett
Chief Mining Engineer

DRG/lcy
Enclosure

cc: Mr. James T. Cooper
Mr. Richard C. Allen
Mr. George V. Patterson

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KERR COAL COMPANY
Comments
May 25, 1983

General

Overall, the Kremmling Resource Management Plan Draft Environmental Impact Statement ("DEIS") is a good general planning document for the future of the Kremmling Resource Area. We at *Kerr Coal Company ("Kerr Coal") support the generalized* approach taken in the evaluation, and we commend the staff of the Bureau of Land Management ("BLM") on the thoroughness and completeness of the document. Kerr Coal supports your "Preferred Alternative" as the best scenario for the future management of the public lands in the area. This alternative will achieve a good overall balance of economic, environmental and social values for the area.

We support your proposal for disposal or exchange of public lands in the area and believe that it will result in better, more effective management of public lands. We agree that the Troublesome WSA is not suitable for wilderness designation and support your recommendation in that regard.

Specific Comments

The following are our specific comments with respect to various sections of the DEIS.

1. At page 31, paragraph 3, "Air quality data for the area is very limited. There are no known existing air quality monitoring sites in the area and, therefore, the information in this section is based on generalizations and some local observations."

Kerr Coal has an air quality monitoring station located on federal lease tract C-12777, a site approved by the BLM through Temporary Use Permit No. CO-010-TU-80-10. In addition, Kerr Coal *has one full year's worth of data from this monitoring* station. Kerr Coal offers these data and the use of the air quality monitoring station (in its present location) to the BLM for inclusion in the DEIS and for future monitoring in the area.

2. At page 73, paragraph 3, "Approximately 200 to 275 million tons of coal could be mined through surface and underground mining methods."

This may be understated. More drilling in the area will probably identify greater reserves. There appears to be at least 275 million tons of federal coal within the Walden area which includes only part of the known federal coal in the 33

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region. This figure of 200 to 275 million tons is mentioned throughout the document. 33

3. At page 82, paragraphs 1 and 3, "There are six coal leases in the McCallum KRCRA; these leases encompass approximately 4,330 acres and are located principally in the Walden area. In addition to the existing leases, there is one preference right lease application (PRLA) for 440 acres near Coalmont. This PRLA will be processed through this planning effort.

Presently there are six existing coal leases in the North Park area. To date, only three of these leases are actively under development. The three undeveloped leases are located in the Coalmont area. Future development of these leases (and the nearby PRLA C-0125854) is uncertain."

There is an apparent conflict between these paragraphs regarding the principal location of the coal leases. This should be reviewed and resolved for the final EIS. 181

4. At page 82, paragraph 5, and page 157, paragraph 5, "*There are three strip mines in operation in* North Park: the Marr and Canadian on public lands and the Flatiron on private. Production at these mines has increased steadily since the initial operation in 1974 and is expected to stabilize at approximately 2 million tons per year, 39 percent above the 1979 production. This coal production accounts for approximately 66 percent of Jackson County mineral production income (USDI/U.S. Geological Survey 1981).

Current coal production from the two federally owned mines in the Kremmling Resource Area accounts for the permanent removal of approximately 2 million tons of coal annually *from 4,330 acres of leased public lands."*

Please note that coal production from the three mines dropped drastically during 1981 and 1982. According to the Colorado Division of Mines report of 1982 Colorado Coal Production, approximately 200,000 tons of coal were produced at the above-mentioned mines during 1982, which is less than 15 percent of the 1979 production figure. It should also be noted that most, if not all, pre-1980 coal production in North Park, particularly from these above-mentioned mines, came from private, not federal, coal lands. Since most of the private coal reserves in the McCallum Area were depleted by 1980, Kerr Coal and the other producers were forced to turn to the more expensive federal coal in the area. Due to a combination of 31

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high federal royalties, high costs associated with emergency leasing (due to the low tonnages available for lease under emergency criteria) and poor market conditions, federal coal produced in North Park cannot be competitively priced.

The two million ton per year production rate as stated above is certainly overstated under the current leasing and market conditions. Federal coal must be offered under the Permanent Leasing Program in order to spread leasing and permitting costs over larger tonnages. Additionally, lower royalty rates should be considered. Even with these provisions, coal production from the two federal mines will not likely reach two million tons per year for at least two years after permanent leases are offered for sale.

Finally, there appears to be a conflict as to whether two or three mines will account for the two million ton per year production. This should be reviewed and resolved for the Final EIS.

5. At page 82-3, Coal Unsuitability Criteria (entire section) and Surface Owner Consultation , and page 114, Coal (entire section). (Refer to DEIS.)

Your decision to apply the coal unsuitability criteria on only a preliminary basis for existing leases until the mine plan review stage is a valuable one. It would also be prudent to defer unsuitable determinations for unleased coal areas shown in table 3-2 in order to allow further study in those areas which might otherwise be considered as a valuable coal resource, and which through careful planning might be mined with little or no adverse effect on the protected resource.

Your surface owner consultation process for coal unsuitability is good in that it provides information where potential problems may arise, but still allows for negotiations between landowners and mining companies when and if mining becomes a real possibility on those lands. We believe that most, if not all, of the unsuitability criteria should be considered in the same manner.

6. At page 85, Paleontologic Resources, "From here to the end of paleontologic resources is part left out."

The omitted portions of Paleontologic Resources should be included in the final EIS. 131

7. At pages 87 and 119, Water Rights, "The Bureau has filed applications for numerous water sources in North Park and Middle Park. Reserved water right claims for 82 springs in North Park and 51 springs in Middle Park were filed as part of the

general state adjudication of 1972. In addition, application for 13 wells was made by the Bureau as a part of that adjudication. Since 1972, many new springs have been identified, and other new water sources have been developed. In accordance with state law, the Bureau has filed for reserved rights for springs and for appropriation water rights for wells between 1972 and 1982.

Public water reserves are springs and water holes that were reserved by the U.S. Government by executive order in 1926 for livestock water and water supplies. The purpose was to prevent anyone from monopolizing large tracts of arid grazing land by controlling water sources. The Bureau is trying to obtain appropriative rights on these water sources.

The Bureau would file for water rights on those waters necessary to achieve the objective of this alternative, such as springs and well waters for livestock and wildlife."

Please provide more information regarding the acquisition by BLM of the water rights on all public lands. We understand and believe that it is good to "prevent anyone from monopolizing large tracts of arid grazing land by controlling water resources." (Emphasis added.) Our concern is that the BLM may end up controlling the majority of water resources and thus control large tracts of land by reserving water for "livestock water and water supplies" when other beneficial uses may be necessary or appropriate in order to best utilize the public lands. 51

It is against the public interest for federal agencies to have controlling interest of the water resources. The holders of allotments, leases, use permits, etc. should determine the amounts of water necessary for their use and be responsible for its acquisition.

Water resources are critical in the area and, in fact, provide the life blood to the many users of public lands. Therefore, the specifics of the BLM plans should be made available to the public.

8. At page 113, Rights of Way and Permits and Leases, "Future oil and gas drilling, along with coal extraction in Jackson County, will require new rights of way or amendments for haul roads, utility lines, water monitoring wells, diversion ditches, sedimentation ponds, and other support facilities.

Energy companies have indicated a desire for permits to authorize short-term water monitoring wells and material stockpiling areas. On the whole, 5 to 10 permits are anticipated annually.

The number of leases may increase during the next 10 years. These authorizations are designed for long-term facilities that do not transport some physical item or electronic message. Thus, leases will be issued for air and water monitoring stations, storage yards, and similar facilities."

The granting of ROW's, TUP's, etc. for haulroads, utility lines, water monitoring, wells, diversion ditches, sedimentation ponds, material stockpile areas, storage yards, air monitoring stations and other facilities related to coal mining operations is generally unnecessary. These facilities generally are located on or adjacent to the coal mining operations and should be included within the coal leases. Better coordination between BLM, USGS and other federal and state agencies which review and approve mining and reclamation permits and, by the way, require many of the above-mentioned facilities, would eliminate much unnecessary confusion and paperwork associated with the TUP's and ROW's for ancillary facilities which should be included within the mine permit and lease boundaries. 172

9. At page 115, paragraph 1, also page 157, paragraph 10, and elsewhere, "...emergency coal leasing would continue as needed to support existing operating mines."

Emergency coal leasing is unduly restrictive on both industry and government. It is our hope and expectation that the valuable coal reserves within the Kremmling Resource Area will be offered for competitive lease under the Permanent Coal Leasing Program in the near future and in no event later than 1987. The DEIS should provide and encourage such permanent leasing of federal coal reserves. Emergency coal leasing is precisely that, leasing in emergency situations. In order to ensure long-term coal development within the Kremmling Resource Area, coal leasing under the permanent leasing regulations is essential and the RMP should emphasize this fact. Permanent coal leasing must be made available in the near future in order to allow both the BLM and the coal industry the ability to make long term plans which will provide for more comprehensive and environmentally sound mining, backfilling and reclamation plans which will help to minimize the environmental effect of mining over the long term, not to mention the savings in paperwork and confusion caused each time an emergency lease is applied for and reviewed.

10. At page 119, Transportation and Access.

The transportation plan and map must be subject to public input and should be developed and included in the DEIS. 176

11. At pages 120, 125, 136, 141 and 146, Outside Coordination Needs.

The BLM should coordinate with all other federal and state agencies, including the Office of Surface Mining, the Colorado Mined Land Reclamation Division and the USGS, which regulate and permit various mining related activities, in order to provide comprehensive and non-duplicative lease terms, permit terms and mining and reclamation plans. 32

12. At page 157, column 2, paragraph 1, "Surface mining and subsidence would not necessarily have an adverse effect on topography. To the contrary, increased grazing and agriculture could result from slope modification and reclamation."

We are in total agreement with this paragraph. Changes in topography, slopes, etc. can and should be considered as part of mining and reclamation plans, particularly when, as this paragraph states, such modifications are a benefit to grazing, agriculture, wildlife habitat and/or other post-mining land uses.

13. At page 171, Unavoidable Adverse Effects, item 4, "4. Loss of wildlife habitat and production on lands developed for energy mineral production would constitute an adverse impact."

It should be stated in this section of the DEIS and noted when considering adverse impacts, that: "Loss of wildlife habitat and production on lands developed for energy (and) mineral production would constitute an adverse impact" only when habitat is the limiting factor on wildlife production and populations in the area being considered for development. 89

14. At page 172, Short-Term vs. Long-Term Productivity, item 1, "1. Duration of energy development impacts on wildlife habitat would depend on the success of reclamation. Restoration of wildlife habitat values associated with developed lands could take 30 years."

It is not uncommon, as evidenced by the Office of Surface Mining and the Mined Land Reclamation Division files, for post-mining lands to be restored to equal or better conditions than pre-mine conditions within a very few years. Developments in modern reclamation technology are continually improving reclamation and lessening the time necessary for restoration of mined lands, as evidenced by the fact that nearly all 88

reclamation bonds are released within ten years after initial reclamation begins on mined land.

15. At page 172, Uncommitted Mitigation Measures, item 1. "1. Utilize habitat improvement techniques, such as range fertilization, vegetation manipulation, reseeding, etc., to increase carrying capacity of unimpacted habitat."

Suggested rewording: Test various habitat improvement techniques and utilize those that are determined to be economically feasible and effective in increasing carrying capacities and improvement of wildlife habitat. Additionally, before such measures are required or utilized, it should be determined that affected populations are limited by available habitat and carrying capacity. 86

This rewording will assure that habitat improvement is necessary prior to its implementation and it removes the laundry list included in the original wording, thus not limiting the available technology to those items mentioned.

16. At page 172, Uncommitted Mitigation Measures, item 6, "6. Allow strip mining to occur in rectangular strips, with undisturbed strips of equal size left between the disturbed sites. To maintain the sagebrush ecosystem, these undisturbed sites should remain undisturbed until the disturbed areas are successfully reclaimed with sagebrush."

The pattern, shape and extent of strip (open-pit in North Park) mining activities is dictated by geology, topography, property and lease boundaries, economics and production rates and cannot be dictated to take the form of "rectangular strips" of a certain size and spacing. Each mining operation must be evaluated individually in order to determine its impact. OSM, Colorado MLRD and other agencies have many regulations which deal with the protection of wildlife values. These should be considered. Additionally, as stated above, such mitigation techniques should not be implemented or required unless they are proven and are, in fact, dealing with the factors limiting wildlife populations. This item should be removed from the DEIS. 87

JOHN R. SWANSON
P. O. Box 922
Berkeley, Calif. 94701

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May 20, 1983

Area Manager
Kremmling Resource Area - BLM
Kremmling, Colorado 80459

Dear Sir,

Please accept my comments, as follows, concerning:

[illegible]

I first visited this area, Colorado [illegible] for many decades that their continued protection [illegible] wilderness [illegible] available, both historic and cultural resources. Preserves [illegible] natural ecosystems [illegible] for them and for all people on these endangered planets.

I believe, then, that the Preferred Alternative proposes [illegible] Recreational [illegible] Indian [illegible] and cultural resources found on the lands and waters administered by this agency.

So, provide a balanced program to fully protect [illegible] and enhance [illegible] and life forms in such habitats, strengthen and expand understanding of ecological diversity, and restore [illegible] damaged lands to their natural environmental condition.

So fully secure and integrate into the concept of [illegible] with foundation [illegible] water resources, the gift many resource [illegible] and expansion the foundation, [illegible] lands [illegible] and [illegible] that the following [illegible] area be [illegible] to the [illegible] system. To be consistent with our [illegible]

- Sandia [illegible] 12,000 [illegible]
  [illegible]

Other areas in this Resource Area also qualify as [illegible] and to be [illegible] along with Sandia [illegible]

So develop, then, a balanced Natural Resource [illegible] resources, and to protect [illegible] and [illegible] preserve intact.

Along with [illegible] on all surface and sub-surface resources [illegible]

Including [illegible] on a [illegible] basis, [illegible] and other minerals, [illegible]

and to reduce substantially land [illegible] and enhance [illegible] area's cultural [illegible] National Forest [illegible] proposed public lands. [illegible] accept the [illegible] land trades [illegible] on land and [illegible] resources

To accept [illegible] for reorganization [illegible] the Kremmling [illegible] area

and to keep in mind that when we save our natural lands and waters, we save ourselves.

Sincerely,

J. R. Swanson

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UNIVERSITY OF COLORADO WILDERNESS STUDY GROUP

Denise Dralle
CU Wilderness Study Group
UMC 188
Boulder, Colo. 80309
May 22, 1983

Harold Belisle
Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, Colo. 80459

Dear Harold,

As part of the BLM planning process, the University of Colorado Wilderness Study Group (CUWSG) requests that this letter be included in the testimony record.

First, I would like to commend you on the thoroughness and the clarity with which this management plan is written. It is direct and explicit and should serve as an example for other management plans.

A unique aspect of this plan which separates it from previous plans, is that seven different alternatives were developed. Each one focuses on a different set of prioritized and ranked uses. Including a brief description and outline which explains the formulation of alternatives and the management perscriptions is helpful in understanding the origin of the alternatives.

The CUWSG does, however, have several concerns. The Preferred Alternative focuses on the "management, production, and use of renewable resources..." It is not clear whether or not this management includes protection of the resources, although it is specifically stated in the Natural Resources Alternative. In the Preferred Alternative two areas where resource protection is lacking concern the North Sand Hill Natural Area and the Troublesome Wilderness Study Area. Under the Preferred Alternative, the Natural area will be changed to a Special Recreation Area which impose fewer restrictions on the use of Off-Road-Vehicles. In this area it is particulary alarming since the North Sand Hills contain many Indian artifact sites and the possibly increased use of ORV could seriously damage this continually changing environment. The constantly shifting 152 119

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landscape randomly covers and exposes these artifact sites. Unless the area is surveyed daily and marked off, knowledge of an entire civilization could be destroyed by ORVs. 119

Another resource which has not been sufficiently protected is the Troublesome WSA. As stated in the Resource Management Plan on page 64, Livestock grazing is the only economic activity within the WSA and would be unchanged by wilderness designation. It states furthermore, that feasibility of commercial recovery for potential oil and gas is low. Concluding remarks state that only the recreation-related industries would be affected. Since this is the Kremmling Resource Area's only WSA, it follows that wilderness recreationalists and related businesses would be favorably affected with wilderness designation of Troublesome. However, the Preferred Alternative states that Troublesome has no supplemental values, and due to a potentially obstructive private inholding, the WSA is recommended for non-wilderness designation. These are not valid reasons for ignoring a portion of less than 3% of the wild, primitive land in Colorado which is still in its natural state. Perhaps a land trade could be arranged so that Troublesome would be a continuous area. The WSA does meet the requirements of the 1964 Wilderness Act of sufficient size, being in a natural state, providing opportunities for solitude and primitive, unconfined recreation, and an educational value for study of ecosystems. Wilderness is a non-renewable resource and should not be allowed to vanish. 138 137

The CUWSG recommends to you to use the Natural Environment Alternative for management of the Kremmling Resource Area public lands. It emphasizes the "protection, maintenance and enhancement of the current natural environment with the Kremmling Resource Area." This alternative still allows for a multiple-use development, but the protection and maintenance of the land is highly considered. If it is not, how can long-term resource productivity be guaranteed?

The CUWSG asks that the BLM please reconsider its non-wilderness designation for Troublesome, the use of ORVs in North Sand Hills Natural Area, and the de-emphasis of resource protection in the Preferred Alternative.

Thank you

Denise Dralle
Director, CUWSG

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PO Box 1674
Grand Junction CO81502
May 24, 1983

Area Manager
Kremmling Resource Area
B.L.M.
POB. 68
Kremmling CO80459

Dear Mr Belisle,

Please enter these comments in the record of the Kremmling Resource Management Plan.

1) The seven RMP alternatives represent a commendable range of interests. I wish to lend my support to the Natural Environment Alternative. Protection, maintenance and enhancement of the current natural environments seems to be a wise course to follow. I strongly support wilderness designation for the Troublesome Wilderness Study Area. The opportunity for solitude or primitive recreation is a dwindling resource. An area which offers this, with little conflict with oil and gas leases or mining claims, should surely be so designated. I urge that public access be required.

2) I have visited the fine North Sand Hills area. I urge its continued protection as an outstanding natural area. The Sand Hills could easily be destroyed with less protection. It is a worthwhile natural area.

3) I support the Ryan Gulch Project as disruptive to recreation, cultural resources and wildlife as well as economically questionable. I hope B.L.M. will continue its opposition.

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4) Tourism, scenery and water are Colorado's strong suits, despite the presence of other natural resources. Timber, minerals and real estate development, unless well managed, conflict directly with Colorado's great natural appeal. It is my feeling that enough development has taken place in Colorado to date that, from here on out, we ought to be extremely cautious, repairing our damages first. I personally use and enjoy BLM lands extensively for my recreation. I like them in their relatively undeveloped, multiple-use condition.

I warmly remember my 4 to 5 months stay in Kremmling in 1979, working on the Minerals Inventory. The geology and minerals had wonderful variety. It was a treat to explore out of the way places, especially in North Park; and I could not say enough about the remote and rural character of the area and some of the really folks I met. Despite its distance from my current home, the Kremmling Resource area has a very warm spot in my memory. I took some of my favorite wide-open-spaces, flower, badger and antelope pictures that season. A gravel pit or prospect has NEVER been the same!

Thank you for the opportunity to comment on your readable plan.

Sincerely,
Jeanne T. Hemphill

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colorado open space council
2239 E. Colfax Ave. Denver, CO 80206 393-0466

May 25, 1983

Mr. Harold Belisle
Project Manager
and
Mr. Adrian Neisius
Team Leader
Bureau of Land Management
Kremmling Resource Area
P. O. Box 68
Kremmling, Colorado 80459

Dear Messrs. Belisle and Neisius:

These comments on the draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) for the Kremmling Resource Area are submitted on behalf of the Colorado Open Space Council (COSC). COSC is a Colorado-based conservation organization composed of over 45 affiliate organizations and approximately 1,200 individual members. COSC has a long-standing interest in BLM land-use planning and federal coal leasing issues.

We appreciate the opportunity to submit these comments in response to the District Manager's notice and my phone conversation of May 23, 1983 with Mr. Neisius. In addition to these comments, the Wilderness Network of which COSC is a member is also submitting comments. These comments supplement those of the Wilderness Network. Also the Public Lands Institute of the Natural Resources Defense Council, Inc. is filing comments on the RMP/EIS. COSC fully subscribes to and supports their comments.

We strongly encourage the BLM to incorporate these comments into the Kremmling RMP and recommend that the BLM prepare a supplemental draft and circulate it for public comment and review.

While most of the following comments concern federal coal leasing activities for the Kremmling Resource Area, we also have some general observations concerning the overall RMP/EIS.

Although the text is easy to read and the format is less confusing than other plans, the RMP has serious deficiencies. It does not appear that the RMP makes real decisions concerning future resource use and protections. In spite of the

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Page two

apparent wide-range of alternatives, the plan's decisions lack non-discretionary language which can be closely interpreted and enforced. Such an example is the coal leasing levels which are discussed later, the environmental consequences (p. 155-197) are limited to "cumulative environmental impacts" and are so vague and general that it is impossible to quantify any real impacts. Mitigation resources are not included or are briefly identified as regulations or standards in other federal or state programs. In addition, the RMP includes conclusionary statements which we believe are questionable and without supporting rationale or documentation.

It is apparent the BLM has tried to develop different levels of resource use in the RMP but substantial changes are needed if the plan is to provide real decisions and protection measures based on the Federal Land Policy and Management Act and the National Environmental Policy Act.

The following comments concern federal coal leasing as described in the RMP/EIS. The sections on coal leasing have serious problems. The areas of greatest concern are the 1) issue of need for additional leasing, 2) excessive coal leasing in the preferred alternative, 3) lack of schedules or concrete limitations in leasing levels which allows for high leasing under the lower leasing alternatives, 4) delegation of responsibility to other agencies for "assumed" mitigation, 5) violation of surface owner consent provisions, and 6) impacts on agriculture and water.

The leasing levels included in the RMP (which range from 13,000 to 107,000 acres) assume a need for leasing which does not exist. Numerous government and private reports (An Assessment of Development and Production Potential of Federal Coal Leases, OTA; Leased and Lost: A Study of Public and Indian Coal Leasing in the West, Cannon; Mine Control: Western Coal Leasing and Development, Cannon; recently released House Appropriations Committee Report and GAO Report) provide convincing arguments that there is no legitimate need for leasing in Colorado and other western coal states. 37

The RMP itself includes a discussion of coal production in the Kremmling Resource Area which seriously question the need for the leasing levels contemplated in the RMP. Uncertain development of existing leases, transportation to produce and less than ideal economic conditions. Extensive leasing proposals for other areas of the Green River/Hams Fork Region and a substantial overcapacity of the coal industry (existing leases with permits and mines but limited or no contracts) negate any conceivable need for leasing in the RMP area. A significant amount of federal coal is split-estate or includes other valuable resources and coal development would conflict with these. Consequently the RMP should limit for the life of the plan, coal leasing to relatively small "maintenance" tracts adjacent to existing operations. This should only be done once the impacts on the acreage have been thoroughly assessed and mitigated in the RMP.

EXCESSIVE LEASING LEVEL IN PREFERRED ALTERNATIVE

COSC believes that the 45,000 acre figure in the preferred alternative has no basis regionally or nationally. While it is encouraging to see the BLM recommend

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Page three

a smaller acreage than the total number of acres which is "suitable for further consideration" after application of the lands unsuitability criteria, the BLM should go further and recommend less.

Also, it appears that the exceptions were liberally applied, other multiple-use conflicts and surface owner consultation-consent was ignored. We do not believe that application of the lands unsuitability criteria address all resource conflicts. BLM is in error to believe these other conflicts will be addressed during activity planning prior to the base sale or in the preliminary process after any lease sale. 36

It is our understanding that the 45,000 acre figure was based in part on old expressions of industry interested under the disregarded EMARS leasing system. The EMARS system artificially inflated industry demand and need.

UNENFORCEABLE LEASING LEVELS

At first glance the RMP appears to offer different coal leasing alternatives. The alternatives include leasing levels from emerging leasing only to 13,000 acres to 45,000 acres to 107,000 acres. With the exception of the 107,000 alternative, the other alternatives prioritize specific acreage and imply that other lands will not be leased. Unfortunately no time schedules are included. Additionally, all the lower leasing alternatives include the following language:

> "These (remaining coal lands, i.e. non-priority areas) would be made available for future leasing only when the coal priority acres had been depleted or a significant demand was expressed that could not be met by the coal priority area."

35

Such open-ended exceptions render leasing levels meaningless and open to continued speculation by the coal industry. If the BLM is going to make leasing decisions in the RMP, loopholes should be eliminated and specific limited acreage (no more than 13,000) might be set aside with a realistic schedule.

DELEGATION OF MITIGATION

Since it is very difficult to identify and select mitigation measures without a detailed assessment of impacts, we cannot recommend mitigation measures related to coal mining. But we must point out that the RMP makes little or no effort to mitigate mining impacts.

Throughout the RMP we read statements such as these:

> "Water quality would be maintained and protected through restrictions on surface disturbing activities" and

34

Page four

"Site-specific restrictions may be imposed to protect the environment or other critical resource values. These restrictions would become part of the lease or approved mine plan" and 34

"All streams on public lands in the resource area that met or exceeded state water quality standards and had acceptable channel stability would be maintained in their present condition through limited management"

"Sensative watersheds would be protected by placing restrictions on activities that may adversely affect them."

Responsibility to control impacts on air, water, local communities and other parts of the affected environment is shifted to other state and federal agencies. Communication between the BLM and towns is supposedly "mitigation". Postponement of mitigation and continued "flexibility" in the BLM's options is not land-use planning as contemplated by FLPMA.

While COSC recognizes that more detailed environmental assessments and development of additional mitigation occurs at the leasing and permitting stage the RMP is seriously flawed because the impacts are not studied and mitigation is often delegated to another agency and assumed that it will protect other resources and the local communities.

SURFACE OWNER CONSULTATION AND CONSENT

The RMP states that 36,000 acres of federal coal lands are split-estate. The surface owners and their opinion concerning leasing were ignored in the RMP. This is especially alarming because surface mining operations conflict with livestock operations, water resources and other environmental factors and 32 percent of the surface owners who responded to the BLM's consultation are against leasing. Plus the coal lands in the Kremmling RMP would be surface mined.

The RMP states that this is not a significant number of opposed landowners and these areas are still considered suitable for further consideration. The RMP justifies this course of action because "Miners would have to obtain the consent of surface owners before mining could take place, however."

COSC believes the RMP violates the surface owner consent provisions of SMCRA which strike a balance in determining the rights of the surface owner and the government.

Actually, the number of surface owners opposed to leasing is "significant" and the acreage should be withdrawn from further leasing consideration. Not to do this will result in extreme and continuing pressure on owners to change their 38

Page five

minds and revoke their prior refusals. This decision is also inconsistent with the congressional emphasis on comprehensive land-use planning in Section 714 of SMCRA and elsewhere. Also the results of the consultation process should last the life of the land-use plan not the activity planning cycle. 38

The statement that consent would have to be obtained by miners before mining could take place is false and must be corrected. Section 714 of SMCRA provides in part:

"The Secretary shall not enter into any lease of Federal coal deposits until the surface owner has given written consent to enter and commence surface mining operations and the Secretary has obtained evidence of such consent."

Thus Section 714(c) gives surface owners an absolute right to "veto" the leasing of federal coal underlying their lands where that coal would be surface mined (123 Cong. Rec. 12643 April 28, 1977). Unless they consent, the Secretary cannot lease that coal for surface mining for any reason (H. Conf. Rep. No 493 95th Cong. 1st Sess. 115, 1977 to accompany H.R. 2). Consequently the lands on which surface owners have voiced opposition to leasing should be removed from any leasing alternative and the text changed to reflect the requirements of Section 714.

If you have any questions, feel free to contact Mark Welsh, COSC Mining Project at 321-6588.

Sincerely,

Mark Welsh

Mark Welsh
Mining Project

Eric Wolfe

Eric Wolfe
Executive Director

/km

STATE OF COLORADO RICHARD D. LAMM, Governor

DEPARTMENT OF NATURAL RESOURCES

HAMLET J. BARRY III, Acting Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 866-3311

Geological Survey
Board of Land Commissioners
Mined Land Reclamation
Division of Mines
Oil and Gas Conservation Commission
Division of Parks & Outdoor Recreation
Soil Conservation Board
Water Conservation Board
Division of Water Resources
Division of Wildlife

May 19, 1983

Mr. Harold Belisle, Area Manager
Bureau of Land Management
P. O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle,

The Kremmling Draft Resource Management Plan (RMP) is an excellent, well-presented document. With a few exceptions we fully support the preferred alternative as a balanced, reasonable approach to multiple-use management. Our suggestions for change or expansion are as follows:

- Wilderness.

  We understand that the Troublesome WSA is not large enough to stand on its own. In view of the fact that the area does have significant wilderness qualities and would be a logical addition to a larger wilderness area in the National Forest, we encourage you to commit to a re-study of the area if the Forest Service re-examines the wilderness suitability of adjacent lands. In the meantime, Troublesome should be managed to minimize intrusions on the wilderness character of the area, to the extent feasible. 138

- Ownership Consolidation.

  The State of Colorado has consistently supported a program to rationalize land management by appropriate disposal of scattered BLM tracts which lack significant natural resource values. We are pleased to see that this plan does not propose extensive land sales. We do 161

Mr. Harold Belisle
Bureau of Land Management

May 19, 1983
Page 2

encourage you, however, not to offer for sale inholdings within National Forests or Division of Wildlife property and other tracts with important resource values. The comments of the Division of Wildlife (attached) indicate some of these tracts with important resource values. You may wish to group "lands for disposal" into two categories: 161

1. Lands for sale, exchange, transfer to state or local government, et cetera, and

2. lands which will not be sold but may be transferred to other public entities legally committed to resource protection.

- Recreation.

  We are pleased to see the proposed designation of the Upper Colorado River between Gore Canyon and State Bridge and the North Sand Hills as special recreation management areas. It would be helpful if the Plan would spell out specific steps, and budget requirements for management of these areas. They play an important part in the regional economy. 120

- North Park Site.

  We encourage BLM to designate the entire 310 BLM acres of the North Park Site as a Research Natural Area. This site was registered on October 1, 1982 by the Colorado Natural Areas Council with the cooperation of BLM because it provides important habitat for Phacelia formosula, a federally endangered species of plant. A Research Natural Area classification would provide long-term habitat protection consistent with the objectives of both the Colorado Natural Areas Program and the federal Endangered Species Act; and would clearly make the land available for necessary ecological research. 106

Sincerely,

HJBarry

HAMLET J. BARRY III
Acting Executive Director

HJ3III:car
Attachments

STATE OF COLORADO
Richard D. Lamm, Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
Jack R. Grieb, Director
6060 Broadway
Denver, Colorado 80216 (826-1192)

48

May 16, 1983

RECEIVED MAY 16 1983 Division of Local Government

Mr. Stephen O. Ellis
State Clearinghouse
Centennial Building
1313 Sherman, Room 520
Denver, CO 80203

Dear Steve:

SUBJECT: Kremmling BLM Resource Management Plan

We have reviewed this document and do not have any major concerns at this time. We would wish to see wildlife, wildlife habitat, and wildlife-related recreation evaluated at an equal level with other activities.

As we have stated on related documents in the past, we are concerned about land disposal even if it concerns very small, isolated tracts. These parcels may not be obviously important wildlife habitat but often are significant when viewed in a broader context. Also, we are concerned that sagebrush eradication on public lands may be detrimental to sage grouse and other species.

I have attached the comments from the Northwest Region as they address specific issues. Thank you for the opportunity to comment.

Sincerely,

Steven J. Bissell
Land Use Coordinator

sg

cc: NW Region
NE Region
Ed Prenxlow
Pete Barrows

Enc.

DEPARTMENT OF NATURAL RESOURCES, Monte Pascoe, Executive Director • WILDLIFE COMMISSION, Donald Fernandez, Chairman
James Smith, Vice Chairman • Richard Dreibiss, Secretary • Jean K. Tool, Member • James C. Kennedy, Member

Divisional Correspondence Only

48

STATE OF COLORADO
DIVISION OF WILDLIFE
DEPARTMENT OF NATURAL RESOURCES

DATE: May 16, 1983

TO: P. T. Barrows

FROM: Perry D. Olson

SUBJECT: Northwest Region's Comments on the Draft Kremmling Resource Area Management Plan (BLM)

The Northwest Region of the Colorado Division of Wildlife is generally satisfied with the management direction for wildlife provided by the Preferred Alternative. Placing emphasis on managing critical and important wildlife habitats is commendable. As an extension of this, we suggest that raising the overall fair condition rating of deer and elk winter range areas in the Resource Area (pg. 99) to a rating of at least good be a goal of the Plan. While fair winter range conditions may allow big game to survive mild winters, the consequences to big game herds of these conditions during a severe winter could be disastrous.

GENERAL COMMENTS

Our principal concerns with the Draft Resource Management Plan are for the disposal of public lands and for management of range land by eradicating sagebrush.

Under the Preferred Alternative, isolated tracts of BLM land that have no important wildlife habitat values would be considered suitable for disposal. This is a very subjective rating and one that worries us. In our opinion, the fact that a piece of land is in public ownership and managed according to a multiple use principle, makes that land valuable to wildlife. Such land is becoming more and more important in the Resource Area as private lands are increasingly becoming developed and losing their wildlife values. We generally are not opposed to trading land to consolidate holdings as this should not diminish the extent of public lands. In these cases the wildlife values of the areas being traded should be comparable. We are very concerned about land sales however. We request the opportunity to coordinate on all future proposed land sales and exchanges. Some specific areas of concern to us are: 173

* Sections 25 and 35, T2N, R80W--sage grouse habitat, big game winter range, antelope habitat.
* Sections 18 and 34, T2N, R97W--sage grouse habitat, big game winter range.
* Sections 6 and 19, T1N, R78W--sage grouse habitat, big game winter range.

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P. T. Barrows
Page 2
May 16, 1983

* Section 25, T1N, R79W--sage grouse habitat, big game winter range.
* Sections 4, 5 and 17, T1S, R78W--big game winter range, hunting opportunities.
* Section 26, T1S, R79W--intermediate big game range, elk calving area, hunting opportunities. 173
* Section 3, T2S, R80W--high fishery value, the Blue River in this area is a Gold Medal fishery.
* Junction Butte and Radium area--tracts adjacent to DOW land generally have important wildlife values.
* Supply Creek area--potential wood frog habitat.
* Sheep Mountain and Crooked Creek areas--elk calving areas, elk migration areas, hunting opportunities for elk, deer, bear, and blue grouse, impacts from areas nearby that are being developed.
* DeBerard Draw area--deer and elk winter range, impacts from nearby SilverCreek development.
* NE¼, Section 7, T1N, R76W--active sage grouse strutting grounds.
* We generally are concerned about proposed land sales in the Grand Lake, Granby, and Fraser areas. Recreation and tourism development in these areas are heavily impacting wildlife in the east end of Grand County. It is becoming increasingly important to protect wildlife habitats on public lands in these areas.

We concur with the statement made on page 100 that "Sagebrush eradicated in Middle Park has reduced the quantity of habitat available to sage grouse." and we are concerned about this adverse impact which occurs primarily on private land. Sagebrush eradication on public lands in Middle Park could also reduce the quantity of sage grouse habitat, and along with the reduction on private land, result in a significant adverse impact to the Middle Park sage grouse population. Big game winter range could also be adversely affected by sagebrush eradication. The location and size of the areas to receive treatment, the timing of treatments, and the method of treatment could all affect the magnitude of the potential adverse impacts to wildlife. We request the opportunity to coordinate on all proposals to eradicate sagebrush on Resource Area land. 93

Firewood gathering should be managed to avoid opening large areas for long periods of time in order to provide solitude to big game animals and allow them to also utilize the area. 92

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P. T. Barrows
Page 3
May 16, 1983

SPECIFIC COMMENTS

Pg. 43, Large Wild Mammals

Bighorn sheep and moose have been observed on BLM lands. The frequency of occurrence should be rated as rare.

Pg. 43, Birds

Peregrine falcons may exist in the Resource Area. These birds have been observed near Windy Gap during all seasons of the year. 91

Pg. 44, Song Birds and Small Mammals

The river otter, which is on the Colorado list of threatened and endangered species, has been reported on lands adjacent to BLM lands in the Hot Sulphur Springs and Kremmling areas.

Pg. 233, Appendix 4, Middle Park

The Wolford Mountain-Antelope Pass area should be closed to snowmobilers. The reason is to stop harassment of big game mammals on winter range. 90

PDO/WRE/sg

cc: Steve Bissell
NW Region
Joe Gerrans
Dave Clippinger
Bob Thompson
Jerry Claassen

49

STATE OF COLORADO

DEPARTMENT OF HIGHWAYS
4201 East Arkansas Ave
Denver, Colorado 80222
(303) 757-9011

May 12, 1983

Mr. Stephen O. Ellis
State Clearinghouse
520 State Centennial Building
1313 Sherman Street
Denver, Colorado 80203

Dear Mr. Ellis:

The Colorado Department of Highways has completed its review of the Kremmling Resource Area Management Plan Draft Environmental Impact Statement and has the following comments.

The transportation and access needs of this resource management area have been addressed for each of the potential management alternatives, except for the "Continuation of Present Management." That alternative should also take *into account the adequacy of the existing transportation system.*

In general, all of the alternatives involving a change in management from the present plan will result in some degree of intensified land use within the Kremmling Resource Area. Increased activity within this area may have adverse impacts on the State Highway system which should be identified before a management alternative is selected. The "Transportation and Access" section of each alternative should include an analysis of the overall ability of the highway system to accommodate increased traffic, expecially heavy truck traffic associated with energy development. 177

As stated in the sections on "Transportation and Access," a transportation *plan is to be developed in coordination with* local, state, and federal road programs following the Resource Management Plan. The Department of Highways should participate in this planning effort, but the relative impacts of the management alternatives need to be assessed in the Environmental Impact Statement. This information will be important to the development of the transportation plan.

Thank you for the opportunity to provide comments on this document.

Very truly yours,

Harvey R. Atchison
Director
Division of Transportation Planning

By Barbara L. S. Chocol
Barbara L. S. Chocol
Manager
Project Development Branch

JKC/rg

RECEIVED MAY 16 1983 DEPARTMENT OF NATURAL RESOURCES

50

STATE OF COLORADO

Division of Parks & Outdoor Recreation
1313 Sherman Street, Rm 618
Denver, Colorado 80203
Phone (303) 839-5437

Richard D. Lamm
Governor
D. Monte Pascoe
Executive Director
George T. O'Malley, II
Director
Colorado Board of Parks and Outdoor Recreation
Richard G. Bentzman
Chairman
Phil Eccleston
Vice Chairman
Hubert A. Farbes, Jr.
Secretary
Teresa J. Taylor
Member
Richard S. Bartlett
Member

April 14, 1983

Lee Carie, District Manager
Craig District Office
455 Emerson Street
P.O. Box 248
Craig, Colorado 81625

RECEIVED 1983 MAY 23 PM 1:47 DISTRICT OF LAND MGMT. CRAIG, CO 81625

Dear Mr. Carie:

The major portion of the Kremmling Resource Area is located in State Planning Region (SPR) 12. The 1981 Statewide Comprehensive Outdoor Recreation Plan (SCORP) identifies this region as having the highest destination demand for outdoor recreation in the state. Activities of high need include 4-wheel driving, day hiking on trails and backcountry, and developed camping. River recreation is also an important statewide issue, particularly for the Colorado River. We, therefore, concur with your preferred alternative, which focuses on recreation management of the upper Colorado River and the North Sand Hills special recreation management areas.

In addition, the state encourages the BLM to continue to make 90 percent of it's land open to ORV recreation and concentrate on ensuring public access to water resources adjacent to and through BLM land, given that the private sector controls the majority of river and stream banks in this area.

The plan itself does not reference how the Colorado SCORP was used as state input into the planning process. The plan should reference the SCORP activity needs for SPR Regions 2 and 12 and address how this resource area will help meet the applicable needs. The SCORP could be used as further supporting evidence of needs for budget requests. 122

After consulting the Colorado State Recreational Trails Committee, my staff received these following two additional concerns:

1) The definition of ORV in the plan. Currently, no definition is presented. Without a definition, ORV (off road vehicle) suggests an activity that occurs off roads. This, in fact, is not typically the case. Most "ORV" use occurs on existing roads and trails. The Committee feels further clarification is necessary. 121

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Lee Carie
April 14, 1983
Page two

2) ORV limitations and locations. While geographic boundaries of areas with ORV limitations to ORV use are presented in the plan, further description of the types of the limitations and the sub-locations of each of these types is necessary for the plan to accurately depict the available ORV opportunities. 123

Thank you for the opportunity to comment.

Sincerely,

Max Vezzani
Acting Director

MV:JC:nb
cc: Ralph Schell
Dewitt John

51

Colorado Wilderness Network

9239 East Colfax • Denver, Colorado 80906 • 573-7870

May 23, 1983

Mr. Harold Belisle, Area Manager
Bureau of Land Mangement
Kremmling Resource Area
Kremmling, CO. 80459

Dear Mr. Belisle:

The following comments on the Draft Resource Management Plan/ Environmental Impact Statement are submitted on behalf of the Colorado Wilderness Network.

In general, I think you will find our comments to be supportive of your efforts on the RMP/EIS. We wish to commend the Kremmling Resource Area staff for the document it has produced.despite the absence of finalized planning regulations at the time of its preparation. We appreciate the time consuming effort by those involved. The Resource Area planning team has done an excellent job of formulating the alternatives and studying those alternatives.

The Colorado Wilderness Network would like to propose major revisions of your Preferred Alternative. We trust that you will consider these revisions as you prepare the Final RMP/EIS and during subsequent reviews thereafter.

Aiken Audubon Society • Arkansas Valley Audubon Society • Aspen Wilderness Workshop • Colorado Association For River Preservation • Colorado Mountain Club • Colorado Open Space Council • Colorado Trout Unlimited • CU Wilderness Study Group • Denver Alpine Club • Denver Audubon Society • Environmental Research Group • Friends of the Dolores River • Friends of the Earth • Gunnison Wilderness Society • High Country Citizens' Alliance • Public Lands Institute • San Juan Ecological Society • San Luis Valley Wilderness Coalition • Sierra Club • Southeast Colorado Wilderness Coalition • The Wilderness Society • Two Rivers Citizens' Association • UNC Colorado Public Interest Research Group • Uncompahgre Audubon Society • Upper Arkansas Wilderness Coalition • Western Colorado Resource Council • Wilderness Workshop

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Colorado Wilderness Network

9239 East Colfax • Denver, Colorado 80206 • 573-7870

Respectfully submitted,

Sharyl Kinnear
Colorado Wilderness Network

Pauline Plaza
National Audubon Society

Michael D. Scott
The Wilderness Society

Mark Pearson
Colorado Open Space Council

Kirk Cunningham
Rocky Mountain Sierra Club

Rosalind McClellan
Board member, COSC

cc: Mr. George Francis, BLM State Director
Rep. Ray Kogovsek
Sen. Gary Hart
Sen. William Armstrong

Aiken Audubon Society • Arkansas Valley Audubon Society • Aspen Wilderness Workshop • Colorado Association For River Preservation • Colorado Mountain Club • Colorado Open Space Council • Colorado Trout Unlimited • CU Wilderness Study Group • Denver Alpine Club • Denver Audubon Society • Environmental Research Group • Friends of the Dolores River • Friends of the Earth • Gunnison Wilderness Society • High Country Citizens' Alliance • Public Lands Institute • San Juan Ecological Society • San Luis Valley Wilderness Coalition • Sierra Club • Southeast Colorado Wilderness Coalition • The Wilderness Society • Two Rivers Citizens' Association • UNC Colorado Public Interest Research Group • Uncompahgre Audubon Society • Upper Arkansas Wilderness Coalition • Western Colorado Resource Council • Wilderness Workshop

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COLORADO WILDERNESS NETWORK

COMMENTS ON THE RESOURCE MANAGEMENT PLAN AND
WILDERNESS DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR KREMMLING RESOURCE AREA

The Kremmling Resource Management Plan (RMP) is one of five "pilot RMPs" for the BLM nationwide. The lack of formal, finalized planning regulations until recently is unsettling and contributes to the difficulty in commenting on this RMP, and other "pilot RMPs". It is apparent that this RMP is aligned with the planning regulations of August 7, 1979, so we will gear our comments toward that alignment. It is our understanding that new planning regulations have recently been released by the BLM. Because of the lack of finalized planning regulations before the preparation of this RMP, the implementation of this particular RMP will rely greatly on the quality of the plan, the quality of the supporting data, and the ability of the land user and the land management agency (BLM).

Upon initial perusal of the document it appears that it is a good quality document. The plan is very candid in its presentation of the material. We recommend the use of this plan as a framework for future BLM planning efforts.

The maps were an excellent addition to the planning document itself. We are concerned that funding may not be available for this kind of mapping in future RMPs, i.e. Colorado's San Juan Resource Area RMP.

The plan contained a fine array of alternatives. The preferred alternative was acceptable to us in some areas, but not in others (specific comments on this subject are forthcoming). The range of alternatives exhibited the inherent difficulty of planning for public interests which allows the BLM to sort out and balance its different publics.

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Page two

We were particularly pleased with the socio-economic analysis in the RMP (pp.57-68). It allowed us to fully understand who the BLM's local constituencies are and expressed the different public interests for public land use. Obviously, a wide variety of goals for public land use are present because of different public interests, and therefore conflicts arise. Many of these conflicts are not easily resolved, or resolved at all. We would hope that the BLM would achieve in its planning process not only an identification of those conflicts but identify a resolution of those conflicts as well where possible. In other words, to minimize public land use conflicts, the BLM must "spell it out" in black and white which management prescriptions will be used under which circumstances. 3

We are concerned that this RMP is not site-specific enough. We understand that the planning team's intent was to provide Kremmling Resource Area personnel with long-term guidance and that site-specific management guidelines would emerge at a later time. It is important that some site-specific guidelines be incorporated into the RMP so that the public can comment on those guidelines. Also, even with a change of personnel, site-specific plans would allow the public to be reasonably assured that goals for public land use will still be met.

BLM regulations state that the RMP is to be revised every 10 years (43CFR 1601.6-3(c)). Nowhere in this document is this fact stated. The EIS gives the impression that this RMP is the final word for management of the Resource Area forever. 6

We also feel that the RMP did not sufficiently satisfy the criterion of including "intervals and standards for monitoring and evaluating the plan to determine the effectiveness of the plan and the need for amendment or revision" (43CFR 1601.0-5(m)(8)). There is only one small paragraph on page 15 of the RMP which states that the BLM will schedule reviews of the RMP, and that the RMP may be amended or revised. We would like to see more detail as to the intervals of those reviews, and the standards and process to be used to determine the effectiveness of this RMP.

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Page three

An outstanding feature of the RMP document is the continual reference to background studies and data on most issues, and their availability to the public. This gave us the sense that statements are well documented, yet without cluttering the text.

We are also concerned that the RMP does not contain figures on plans for roading, as there were in the Glenwood Springs Resource Area RMP, also a "pilot RMP". At one time we were informed that the road plans were not completed. This is an important variable which should be developed and specified. It is preferable to see road plans in the draft RMP/EIS so that citizens may comment on these plans. 178

SPECIFIC COMMENTS ON THE RESOURCE MANAGEMENT PLAN DEIS

Visual Resources

We support the Natural Environment Alternative (NEA) since it "affords the most protection to visual resources..."(p.173, RMP). Maintaining the visual resources are crucial in the Kremmling Resource Area (KRA) because tourism is important to the area's economic base and quality of life. The RMP states our case very well on page 105 where we read, "The visual setting is an important part of the lifestyle in both North and Middle Parks. Local people, as well as tourists, expect to see open mountain vistas, cool rushing water, high forested slopes, and vast, rolling sagelands."

Livestock Grazing

We recognize the importance of ranching to the local communities in the KRA. Despite its decline relative to other sectors of the regional economy, ranching serves as an agent of historic continuity and in maintaining the region's quality of life. It is unfortunate that two non-renewable, short-term economic activities, namely the McCallum oil field and two coal strip mines, have adversely impacted and reduced available forage lands.

We are concerned that 83% of the grazing allotments, or 77% of the range in the KRA, was found to be unsatisfactory (p.88, RMP).

The Preferred Alternative (PA) is acceptable to us in that it recognizes the problem of overgrazing and reduces the number of AUMs from 45,648 to 39,726. We trust that the BLM will monitor the condition of the range and further reduce the allotments if necessary to prevent further overgrazing. We are concerned that the area Northeast of Kremmling is shown as a grazing area on the PA map, whereas the same area is shown as being in an Erosion Zone on the NEA map. We support the NEA on that particular area.

The management levels prescribed in the PA appear to be reasonable. Management level two is preferable from a conservationist's point of view.

We are also concerned that the AUM grazing fee is only $1.45 per AUM (contrary to p. 91) whereas between $3-20 per AUM would be required for range improvements depending on the alternative.

The annual monitoring system initiated in 1981 is wonderful.

Water Resources

The PA and NEA appear to be identical. It was difficult to compare the two alternatives because the PA addressed water resources in its narrative on three levels: surface water, ground water, and sensitive watershed. The NEA did not address the three levels in its narrative. The BLM should be more specific as to what the difference is between these two alternatives. We support the alternative which affords the most protection of the water resources in the area.

We are leary of the statement in the PA on p. 115 that "improvements to sensitive watersheds would be accomplished through intensive management practices initiated by other resource programs, such as range or forest management." We are not clear what the BLM intended to say in this statement. For example, it would be much to our chagrin if the BLM were to propose clear-cutting techniques as a means of increasing water yield. We have consistently opposed such water resource management practices. To reiterate, we would like to see more details concerning water resource management in the KRA. 62

Cultural Resources

Our comments in this section will be geared towards the protection of the North Park phacelia formosula site and the status of the North Sand Hills.

To begin with, we recommend that the 310 acres of BLM land known as the North Park phacelia formosula site be designated as a Research Natural Area (RNA). There is some confusion in the RMP as to what designation the BLM prefers under its PA. On p. 116 the PA identifies the site as being an ACEC, yet on p. 169 the PA identifies the site as an RNA. We prefer to see the site designated as an RNA for several reasons: 106

*The phacelia formosula site is the most recent addition to the Federal Endangered Species Plant List. This is the most important site in the WORLD for this species.

*RNA designation would provide the greatest amount of habitat protection. Under the current KRA administration, the site would most probably be adequately protected as an ACEC, however, we cannot be assured of this administrative protection in the future.

*RNA designation satisfies the objectives of both the Federal Endangered Species Act and the Colorado Natural Areas program.

The PA is acceptable to us as regards the designation of the North Sand Hills area as a Special Recreation Management Area (SRMA). We understand that the North Sand Hills area is one of only two cold climate dunes in the state. We also understand that the other cold climate dune, namely the East Sand Hills area located on state land, is closed permanently to Off-road Vehicle (ORV) use. This is a direct result of the protection agreement between the Colorado Division of Parks and Outdoor Recreation and the Colorado Natural Areas program.

We would encourage the BLM to continue to work with the Colorado Division of Parks and Outdoor Recreation in the management of the North Sand Hills area. We recognize the importance of the area for its evidence of Indian artifacts. We also recognize that this area may be the last dunes area for ORV use. In light of the North Sand Hills historic ORV use, designation of the area as a RNA would be a misnomer. Therefore, we concur with the designation of the area as a SRMA.

Recreation

We must concur with the NEA as it is the only alternative in which the proposed Azure Project would not be compatible with the management objectives.

The RMP acknowledges the importance of recreation to the KRA economic base. The RMP also states on p. 105 that the Upper Colorado River has become a major recreation feature. Whitewater use has increased 24% on the river between 1976 and 1980. The RMP states that the upper Colorado River ranks second in total use among whitewater rivers in Colorado (p.105). As a result of the increased use a permit system was initiated in 1979. It is apparent that the BLM should oppose the Azure Project. If the project were to be completed, the quality of the recreation experience on the upper Colorado River would diminish. Access would most likely be impaired. This would result in a decrease in recreational use, and thus a decrease in economic benefits for the KRA.

We would also urge the BLM to work more closely with the State Fish and Game Commission to establish a quality fishery in the Colorado River.

We concur with the PA regarding the status of North Sand Hills as a SRMA (see Cultural Resources comments).

As stated in the RMP on p.117, "The remaining public lands in the resource area would receive limited management for dispersed recreation uses, such as hunting, hiking, and sight-seeing." Because of an increase in demand for recreation areas, the BLM states on p.108 that the limited management prescription may not be adequate in five years. We would like to see specific guidelines for monitoring and evaluating the recreation limited management prescription. 125

Coal

The RMP/EIS is severely deficient with regard to coal leasing. The areas of greatest concern which present the most serious problems are:

*The issue of a need for additional leasing.

*Excessive coal leasing in the PA.

*Lack of schedules and concrete limitations in leasing levels which allow for high leasing even under the lower leasing alternatives.

*Delegation of responsibilty to other agencies for "assumed" mitigation.

*Violation of surface owner consultation and consent provisions

*Unacceptable impacts on agriculture and water resources.

Although we are pleased that the PA avoids recommending the maximum acreage for coal leasing, despite strong pressure from the administration to turn over as much of the public domain as possible to the coal industry, We are concerned that even this reduced acreage is far more than can economically be developed. The unlikelihood of coal being developed on this scale is apparent in that 1) 2 of the 3 coal mines in the region have closed, 2)only 3 of the 6 leases in North Park are actively under development, 3) of 150,000 acreas of coal leases in Colorado, only 25,000 are currently in production, and 4) nationwide there is enough coal from mines already in operation to last our country until the year 2052. (This figure does not even include coal already under lease). Why is there a need for new leasing?

The PA is offering more leases than can be developed. Perhaps coal leasing in excess of demand is the administration's way of removing public lands from public stewardship. Furthermore, assigning priority coal use to so much acreage prevents the BLM from excercising other more beneficial management options.

The coal leasing process must be speedily expedited so that lands where coal development is not economically feasible (because of transportation costs, surface owner problems, and geological and technical problems) can be freed for other purposes.

Even the 45,000 acre figure in the PA is too high considering that much of the leasing would take place in areas where coal production would meet with serious technical problems,i.e. some coal seams surface only at their corners, some leases are sideways to the actual seam and only intersect with the underlying coal at the corner, and the cost of transporting the coal from the region.

Much more economically beneficial and appropriate uses for these same areas would be wildlife and grazing uses. Therefore, the 13,000 acre figure of the NEA is much more reasonable.

There is a serious question as to whether the public interest of the region is best served by any plan for the KRA which does not protect its recreation base to the maximum, which this coal leasing target does not. Much more preferable would be a minimal amount of acreage

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recommended for coal which would allow the ecomony to expand upon its existing recreation base.

Although the statement is made that increased coal leasing would promote local employment, the truth is that much of this employment growth would benefit an outside labor force, bringing with it concomitant socio-economic strains.

Oil and Gas

We support the NEA since it proposes "not surface occupancy" and "temporary surface use restrictions". This leads one to believe the use restrictions in the umbrella assessment are not adequate. Also, we feel that the umbrella assessment was completed without proper public involvement.

Also with the NEA, oil and gas use priority is consolidated rather than scattered all over the landscape as in the PA as seen on the maps accompanying the RMP.

Intensive oil and gas developement poses big problems for elk and other wildlife populations. Mule deer, pronghorn antelope and Rocky Mountain elk are the most common large mammals found in the KRA (p.43, RMP). BLM public lands provide the vast majority of winter range available to deer and elk in the KRA.

Oil and gas often produces extensive, hastily planned road systems, as well as substantial human activity and surface disturbance.

Elk are more susceptible to disturbance and harassment than are other ungulates.

The net result of intensive oil and gas exploration is a reduction in total numbers of wildlife and a decrease in productivity; this reduction has also been documented by Theissen (1976) and Leege (1976); these reductions are related to loss of habitat, and to stress and over-hunting as a result of uncontrolled access.

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Forest Products

The PA and NEA are very similar in their projections for Annual Allowable Harvest and Management Intensity (p. 149)

The BLM does not say how much timber they propose to cut, only that the allowable cut for the PA "would be about the same as the present 4 to 5 million board feet" (p.116). This is approximately the same as the long-term sustained yield for the area (p.94), i.e. the greatest amount of timber that can be cut without denuding the land.

Will the demand determine how much is actually cut and sold? The demand at present is quite low. There has been no increase in lumber industry employment at either the state or national level since 1979, reflecting "the slowdown in the construction industry" (p.97). Indeed, the mill at Kremmling has been closed for sometime. 76

The BLM should not offer for sale more timber than can be sold, as it would be a waste of money to prepare sales that will not occur. We note that no timber was purchased from the BLM in 1979 or 1980 (Table 3-18, p.97). The final RMP should update this table with figures from the most recent years. Demand should be projected into the future and a level of harvest predicted based on this demand.

We note that the preferred silvicultural method is clearcutting(p.76), up to 40 acres in size. The major species is lodgepole pine (pp.41 and 95). Alexander, 1974, found that the maximim size opening likely to regenerate naturally was 4-5 tree heights on north slopes and 2-3 tree heights on south slopes. These are a good deal smaller than a forty-acre opening. The larger openings could be planted, but this is much more expensive than natural reproduction.

Alexander, 1974, also found that lodgepole pine can be cut using the shelterwood or group selection methods under certain conditions. These methods would be appropriate where multiple-use considerations, such as recreation or wildlife, preclude clearcutting.

In spruce-fir forests some shade is necessary for survival of seedlings (Alexander, 1974). Thus partial cutting is preferred over clearcutting. We are pleased to see that partial cutting is the normal

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practice for spruce-fir (p.96).

Timber could be harvested from lands not under intensive managemnt (p.77). It is appropriate to attempt to salvage trees from an area that is severely affected by insects, disease or windthrow. The wood so harvested can then be sold for posts, poles and firewood. However, such areas should then be reforested, unless permanent opening are desired. Natural regeneration should be attempted first. If that fails, planting or direct seeding can be used to ensure reforestation of the cutover land.

Lands and Realty Program

The KRA land and realty program, as described in the PA, would result in 16,897 acres of public land being classified as suitable for disposal. The RMP is not detailed enough to determine what percentage of which types of public lands accounts for the total acreage available.

Manageability is a commendable goal of the lands and realty program, but it is better accomplished by exchanges rather than by land sales so that the BLM can maintain its overall resource base. The program's focus should be the identification not of lands for disposal, but of lands whose acquisition (by exchange) would improve the consolidation and manageability of resource-rich BLM lands. 161

We would like to have more information of the larger, more valuable parcels up for disposal in order to comment on their disposition. More information should be made available for public review on detailed aspects of the program, such as fair market value, who gets the first chance to buy tracts, and whether state or local approval will be required for sale.

Priority for exchange should be given to private or state inholdings in WSAs or other environmentally sensitive lands.

Wilderness

It is disappointing to note that although the RMP speaks in glowing terms of the wilderness values of the Troublesome WSA, the PA does not recommend that Troublesome be designated as wilderness. The PA states on p.117, "Because it is a relatively

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small area and other larger areas are abundant in the region, the Troublesome WSA is not a significant potentiah addition to the National Wilderness Preservation System on a regional, state, or national basis." The proximity of the Troublesome WSA to other designated wilderness is unfairly counted against it. Nowhere in the plan are similar arguments used against identification of coal priority areas simply because of proximity to existing coal development areas. Arguments of this type should be used for all resources or for none. Wilderness resources should not be singled out as special cases. 139

We are concerned that by not recommending even .67% of its total land area in the KRA, the BLM may be in violation of the multiple use mandates as spelled out in the Wilderness Study Policy of February 3, 1982. The Wilderness Study Policy states on p. 5106,"Emphasis should be on multiple natural values of roadless areas as part of an overall multiple use framework for a gereral area rather than primarily, recreational uses. In addition to public use values, ultimate designation as wilderness should augment multiple use managemnt of adjacent or nearby lands in protecting watershed and water yield, wildlife habitat, preservation, preserving natural plant communities and similar natural values." The Policy statement continues by stating on the same page," In addition to its value as a setting for primitive recreation or solitude, wilderness can also provide a range of benefits to other multiple resource values and uses which are of significance to the American people." 140

We are also concerned that the BLM may be only "following suit" to the Forest Service decision regarding Troublesome,i.e. since the Forest Service (F.S.) did not recommend that the adjacent Troublesome F.S. lands be included in the National Preservation System (NPS), the BLM is also not recommending wilderness designation for their portion of Troublesome. We would like to see the BLM take the initiative with Troublesome. We feel confident that if the BLM were to reverse this trend and recommend Troublesome as an inclusion in the NPS, the F.S. would also recommend Troublesome as suitable for wilderness during their next planning cycle. We feel that the BLM should make this decision 141

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based on their findings as seen in the RMP on pp.50-51, and not rely upon the F.S. decision as the basis for their (BLM's) decision. This is especially true since the Colorado Division of Wildlife recommended that the F.S. restudy its classification of the area. The Division cites the critical elk summering, calving, and wintering grounds of the Troublesome area as necessary to ensure survival of Middle Park's elk herd. 141

We feel that the BLM Troublesome WSA is very deserving of wilderness designation. Some of the attributes the Troublesome area exhibits include:

*Wilderness designation of the area will secure an undisturbed habitat for the large deer and elk herds, and rare species such as the prairie falcon and the golden eagle which are found in the area.

*Although there is marketable timber within the proposed wilderness, timber sales are unjustified. The value of the timber most likely will not exceed the road construction costs. Cutting activities and increased vehicular travel will disrupt the valuable wildlife resources of the area. The resource values of recreation, wilderness education, scenic beauty, pure watersheds, and undisturbed wildlife far surpass the timber resources in the area

*Wilderness designation will not impede livestock management and grazing practices in the area. Management can be undertaken by horseback.

*Wilderness designation of the area will protect the undisturbed watershed, and will ensure a constant flow of high quality water for a variety of uses.

*There are four plant species found in the proposed wilderness which are unique to the mountains of Colorado. Those four species are: Trillium ovatum, Mimulus leursii, Leursia triphylla, and Rhododendron alliforum. 144

Any WSA not recommended for wilderness should have management prescriptions which protect the wilderness characteristics of the area to the greatest extent possible. BLM is not recommending adequate administrative protections in the RMP in the case that Troublesome is not wilderness. 142

The Bailey-Kuchler Natural Vegetation Potential Model is too generalized to address the unique combination of topographic and vegetative forms found in the WSA. 143

CONCLUSION

To summarize our concerns with the Kremmling Resource Area Draft RMP/EIS:

*We support the PA for grazing, with the exception of the use of the large area northeast of Kremmling as a grazing area. This area is an Erosion Zone.

*The PA is acceptable to us for Cultural Resources. We concur with the BLM's decision to identify the North Sand Hills area as a SRMA. We would like to reiterate our support for the designation of the North Park phacelia formosula site as a Research Natural Area.

*The RMP is severely deficient with regard to coal leasing.

*We recommend the alternative which affords the most protection of the KRA's water resources.

*We support the NEA in regard to visual resources.

*We support the NEA in regard to recreation.

*We do not support one of the BLM's alternatives in regard to forest products. Rather, we offer recommendations for timber management practices.

*The PA cites too much acreage for disposal for its land and realty program. We prefer to see land exchanges rather than land sales.

*We support the NEA in regard to wilderness, since it is the only alternative to recommend the Troublesome WSA be designated as wilderness.

Because of the recent release of new BLM planning regulations, we wonder if the KRA will release a new DEIS/RMP to comply with these regulations? 4

Also, because the RMP was not site-specific enough, and is deficient especially in regard to coal leasing, perhaps a supplement to the DEIS/RMP should be released. 5

Overall, the BLM has done a good job of formulating alternatives which exemplify different public interests. The maps were an excellent addition to the document. The socio-economic analysis was also excellent.

Natural Resources Defense Council, Inc.
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May 25, 1983

Mr. Harold Belisle
Area Manager
Kremmling Resource Area
Bureau of Land Management
P.O. Box 68
Kremmling, Colorado 80459

Dear Mr. Belisle:

Enclosed are the comments of the Public Lands Institute of the Natural Resources Defense Council and the National Wildlife Federation on the Draft Environmental Impact Statement/Resource Management Plan for the Kremmling Resource Area.

As a consequence of our review, we believe that the very serious deficiencies of this Resource Management Plan/Environmental Impact Statement can be corrected most efficiently through preparation of a comprehensive supplement for review and comment by the public and the local, state, and federal agencies.

The Area Office staff was very gracious and helpful in answering our questions. Thank you. We want to offer our assistance as you continue the planning effort. Please do not hesitate to contact us.

Sincerely,

Carolyn R. Johnson

Carolyn R. Johnson
Senior Public Lands Specialist

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COMMENTS OF THE

NATURAL RESOURCES DEFENSE COUNCIL, INC.,
ITS PUBLIC LANDS INSTITUTE AND THE
NATIONAL WILDLIFE FEDERATION

ON THE

DRAFT RESOURCE MANAGEMENT PLAN

AND ENVIRONMENTAL IMPACT STATEMENT

ON THE KREMMLING RESOURCE AREA

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COMMENTS ON THE DRAFT RESOURCE MANAGEMENT PLAN
AND ENVIRONMENTAL IMPACT STATEMENT
ON THE KREMMLING RESOURCE AREA

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INTRODUCTION

The Kremmling RMP is being prepared under new Bureau of Land Management planning regulations issued in response to a need for a more formal, comprehensive, far-sighted planning effort and public participation in the planning and management of public resources. Because the Kremmling plan is only the second RMP/DEIS issued under the new regulations, we recognize the difficulty of preparing such a document without a clear example to follow, and at a time of abruptly changing regulations and policies within BLM. Nevertheless, fulfilling the directive for more comprehensive land use planning is not an impossible task and is within the professional level of work we know the Kremmling staff is capable of attaining.

Although in some respects the Kremmling RMP/DEIS is an improvement over previous MFPs, it is fundamentally flawed and falls short of meeting regulatory and statutory mandates for planning issued under the Federal Lands Policy and Management Act (FLPMA) and for environmental analysis under the National Environmental Policy Act (NEPA).

The plan and EIS appear to be an attempted amalgamation of the substance of the old Management Framework Plan (MFP) system clothed in the procedures of a Resource Management Plan. Outwardly it has a draft environmental impact statement, identified issues, alternative plans, etc. Stripped bare, however, it retains the main problems of MFP's and lacks the objectives, information, analysis, and plan components for informed decision-making and public participation. Vague or nonexistent limits preserve all decisional "flexibility" to the agency with no guideposts and objectives to measure the results and insure accountability. In short, this product appears not to be a comprehensive planning effort now, but merely a plan to start planning at some unspecified future time. 13

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In preparing RMP's, BLM must develop long-term management plans and assess their environmental impacts as specifically and comprehensively as possible. We would like to stress the need to develop RMP's which contain as specific directions as possible for several reasons. 13

First, as Chapter 1 of the RMP/DEIS notes, it is in the interest of more efficient management and use to develop master plans to guide BLM management as well as those who use the public domain. The goal of the RMP is to eliminate a piecemeal approach to managing the public's resources by providing a comprehensive, cumulative analysis of decisions that could affect each resource.

Secondly, more detailed planning and foresight can also result in better protection for sensitive natural resources against long-term or irreparable damage from the impacts of other land uses. More comprehensive prior planning is needed to prevent undesirable levels of cumulative impacts of development on other land uses, in particular, which occur when apparently small insignificant impacts accumulate over time. 14

Third, the current BLM planning regulations are designed to maximize public input and review of public land management decisions. By preparing a draft RMP which is detailed and specific, public participation and review can be more specific in the early stages of preparation. This will lead to an adopted final RMP which will accommodate a variety of specific land use decisions and that will have been subject to public scrutiny early in the process, as is required. 15

The identified deficiencies justify a comprehensive supplement to this draft RMP/DEIS. The additional information, planning, and analysis that is required to make this RMP/DEIS a specific planning and analytical document would substantially change the scope and content of the existing document. For these reasons, the public, and local, state and federal agencies should be given the opportunity to comment on the content of another draft RMP/DEIS. 16

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GENERAL COMMENTS

We do not believe the draft RMP/DEIS as presented has accomplished the purpose set forth in Chapter 1 and in the planning regulations, 43 CRF 1601.0-1 and 0-2 and 1601.5. All the alternatives in the Kremmling document more closely resemble the piecemeal approach to planning BLM has used in the past, rather than following the comprehensive inter-disciplinary approach to planning and impact analysis outlined in FLPMA and BLM planning regulations. The draft RMP/DEIS contains a well-developed description of the current management situation, but stops short from presenting a plan which addresses the major questions and land-use conflicts posed as "side-boards" or planning criteria on pages 17 through 21. In order to formulate a plan which adequately addresses these land use questions and conflicts, we strongly advocate following the planning approach and definitions outlined in BLM planning regulations more closely and completely. We urge BLM to use the planning process to project, as much as possible, the cumulative impacts of development and resource protection under various alternatives; and then devise a management plan to meet the goals or objectives for development, as well as conservation and protection of sensitive natural resources. For many aspects of multiple use, such as wildlife recreation, watersheds, scenic values, and conservation for future uses, RMP's should utilize a much more "ecological" approach, setting area-wide threshold levels and specific restrictions on crucial areas to ensure that present and future needs are met. The following discussion emphasizes those areas we feel have been neglected most or that require more analysis in the formulation of a resource management plan. 17 18 19

Many Goals Are Not Specified

BLM planning regulations require that RMP's include "resource condition

goals and objectives to be attained." 43 CFR 1601.0-5(m)(3) and 1601.7-3(e). Goals are defined as "the desired state or condition that a resource management policy or program is designed to achieve," while objectives are "planned or results to be achieved," which are "narrower and shorter in range" than goals, and which specify "time periods for completion, and outputs or achievements that are measurable and quantifiable." 43 CFR 1601.5(e)(h).

In addition, regulations state that where appropriate RMP's must include "threshold levels" which are "specific defined levels of resource use, production or development which are established as maximum or minimum constraints," such as on wildlife habitat or coal production. 43 CFR 1601.05(o).

The alternative plans presented are fairly specific in setting goals and objectives for commercial land uses, such as the number of acres available for coal leasing, timbering and land disposal, and the AUM's available for grazing livestock. However, the plans do not *present well-defined goals*, objectives or appropriate threshold levels for many critical non-market resources, such as non-game wildlife populations and habitat; resources held in reserve for future potential uses (see 43 CFR 1601.0-8(f)); outstanding visual resources; and forms of recreation other than boating and fishing along the Colorado, and ORV use in the North Sand Hills (namely, camping, hiking, climbing, picnicing, sightseeing and cross-country skiing, which account for a large portion of the estimated Recreational Visitor Days provided by public lands in the area). 20

The sections labeled "Affected Environment" and "Continuation of Current Management Alternative" indicate that in many cases BLM has a broad, in-depth knowledge of biological inventories, biological trends (such as critical habitat use), recreational resources, as well as the economic importance and interrelationship of those resources to the area's economy, ecology, and quality of life. Such information can provide a basis for setting goals, objectives, or

threshold levels for many non-commercial resources, and for setting maximum constraints on many types of commercial development. Neglecting to set more specific goals, objectives or threshold levels for non-commercial resources at the outset of the planning process seems to have contributed to underemphasis of the less tangible, non-commercial resources in favor of commercial resources for which specific goals have been set. 20

Also, the unequal treatment of all resources in establishing objectives for each alternative makes the environmental impact analysis of each alternative *vague and inadequate. In each management* alternative, the potential cumulative impacts and tradeoffs between conflicting land uses cannot be identified or quantified without objectives or threshold levels for each resource.

Incompatible Uses and Misplaced Priorities

Under the definition of "resource management plan" (43 CFR 1601.0-5(m)(1)), the plan is to establish in a written *document "Land areas for: limited*, restrictive or exclusive use; designation, including ACEC designation; . . . ." The regulations further state that "priority shall be given to the identification, designation, protection and special management of ACEC's;" (43 CFR 1601.8(c)); and that "capability analyses shall permit identification of specific uses or management practices that cannot be allowed on specific land areas due to physical conditions." (43 CFR 1601.0-5(o). In contrast to this directive for specifically protected or restricted areas, no area is designated for Natural Area or Area of Critical Environmental Concern (ACEC) status in the preferred alternative. At least one area does qualify in other alternatives (p. 5, 7). Only two areas (7,460 acres) are designated for Special Recreation Management. Why not all alternatives or designations? 21

Another example of the lack of restrictions being placed on certain areas is the discussion found in Volume 2. The "Land Use Priorities" in Volume 2 for all alternatives are so general and allow so many potentially conflicting uses

on each land area that the term "land use priorities" is meaningless. Maintenance of natural scenic qualities, recreational opportunities and wildlife, for instance, are all cited as compatible with committing area to commercial timbering; while oil, gas, mineral, and timber development are cited as potentially compatible uses of protected areas containing threatened and endangered plant and wildlife habitats, cultural sites on the National Register, alluvial valley floors, and other critical or significant natural values (pp.8-10). 153

The principle of multiple-use should not be construed to mean using each parcel of land in as many ways as possible, as the RMP seems to do; rather, the objective of multiple use planning should be to achieve balanced use of land on an area-wide sustained-yield basis. We believe this is the stated goal of "multiple use" as used in the Federal Land Policy and Management Act of 1976 (FLPMA). In particular, "multiple use" is defined as including "the use of some land for less than all of the resources;" and the use of "a combination of balanced and diverse resource use that takes into account the long-term needs of future generations for renewable and non-renewable resources, . . ." in all management planning. FLPMA goes on to define "multiple use" to also include:

> "harmonious and coordinated management of the various resources without impairment of the productivity of the land and the quality of the environment. . . ."
> (PL 94-579, Sec. 103(c)).

In many, if not most cases, use of land for critical wildlife areas, ecological reserves, sensitive watershed protection, and extraordinary scenic and recreational sites is simply not compatible with timbering, energy and *mineral* development or even livestock. Mitigating impacts of commercial development through techniques mentioned -- such as road reclamation, project design, avoidance of habitat during certain seasons, and other stipulations on development -- can solve some, but not all of these conflicts. The success of such 22

mitigation is often uncertain or very costly, while damage to sensitive habitats, natural qualities and scenic areas is often long-lasting or entirely irreparable.

By setting specific land use restrictions in the RMP and placing reliance on preventative measures to protect sensitive resources, future land use conflicts encountered on a case-by-case basis would be substantially reduced. This would allow for more efficient use of BLM staff time as well as protection of those sensitive resources for future generations. Habitat, recreational, visual, and other natural resources are generally not lost suddenly, but are lost in small pieces that accumulate over time. As the staff has noted in Chapter 1 of the DEIS, a "piecemeal approach" does not provide a comprehensive or cumulative analysis of the effects of taking . . . various actions" (p. 11). More efficient and reliable protection of these resources can therefore be achieved by determining minimum threshold levels and developing management programs which include specific land-use restrictions to see that these levels are met. 22

Evaluation of the Plan Lacks Standards

The alternatives lack a plan for monitoring the inplace RMP. According to 43 CFR 1601.5-9, the District Manager is to establish standards for monitoring and evaluating the plan. In particular the standards are to provide for the evaluation of mitigation effectiveness, whether any "established threshold levels have been met or exceeded," and "whether there is new data of significance to the plan." Monitoring and evaluation reports are to be written and are used to determine whether the plan should be revised or amended. The RMP/DEIS includes on p. 15 a commitment to review the RMP at least every five years, as is required in the regulations. However, there is no discussion of the standards to be used in the evaluation process. We believe the standards must be closely developed along with the system BLM devises to set goals, establish threshold levels for resources, and the criteria for each of these activities. Without 23

standards, BLM does not know where it's been.

Inventory Data Must Be Summarized

In order to achieve informed public participation in the planning process, the RMP/DEIS should include summary maps of some of the inventory data that is referenced in the RMP/DEIS as available in the area office. Information such as the location of critical wildlife habitat, threatened and endangered species, important watersheds, and potentially sensitive natural areas as well as summaries of erosion conditions and/or erosion hazard areas is needed by the reader. *In some instances data has been mapped, such as recreational areas.* This information has been most helpful in reviewing the RMP/DEIS. As is required by 40 CFR 1502.21, incorporation of material by reference is desirable to cut down on length. However, the content must be briefly described. In many instances this was not done. We believe the brief description should be adequate to assist the reviewer in his evaluation of the RMP/DEIS, and would be an extreme improvement over requiring review of complete, often technical and complex, documents in the area office. 24

Alternatives Require Description and Analysis of Impacts

The failure of the BLM staff to set goals, objectives and management plans for the renewable as well as the non-renewable resources under each specific management program or alternative contributes to the lack of environmental impact analysis in each alternative. Without more specific goals or objectives, management programs needed to attain these "guideposts" cannot be meaningfully assessed.

In Chapter 3, the alternatives chapter, we note that the description of the no action alternative (continuation of present management) is quite adequate as the discussion includes both background information and environmental impacts in some instances. However, this is not the case with the other alternatives including the preferred alternative. In fulfilling the agency's responsibility

under 40 CFR 1502.14, analysis, similar to that of the no action alternative, should be completed for the other alternatives so that the reader understands the issues and choices among alternatives.

In Chapter 4, "Environmental Consequences", the presentation and format of this Chapter makes it very difficult to determine what the impacts are from implementing each alternative. Rather the approach of discussing impacts by resource compartmentalizes the analysis at the loss of providing a clear, analytical discussion of the major and minor environmental impacts associated with each alternative. We note that an interdisciplinary approach, as is required by the BLM planning regulations and the President's Council on Environmental Quality regulations, seems to be lacking in the management planning and hence in the environmental analysis. The format used in this Chapter underlines one of the reasons the interdisciplinary approach is not evident in this analytical product. Each discipline is discussed in its own compartment with little consideration of impacts produced by other actions. Interdisciplinary work requires persons of different backgrounds to pool their expertise and examine impacts together and in interaction. 8

The summary of impacts table found at the end of the Chapter is not sufficient by itself to give the reader a comprehensive idea of the sum of the impacts associated with each alternative. The table is lacking in quantitative data (as is the Chapter) as well as detailed analysis. More often than not impacts are labeled similar for three or more alternatives yet there are seven different management schemes (alternatives). If the impacts are that similar from one alternative to the other maybe there is not a need for all seven alternatives. 9

According to 40 CFR 1502.16, the environmental consequences section forms the scientific and analytic basis for the comparisons presented in the alternatives section. The lack of quantification in the analysis of certain resources -- such as critical wildlife habitat, range management techniques, known significant 10

cultural resources -- makes comparison of some elements of the alternatives meaningless. The lack of detail in the impact analysis of some resources contributes to apparent inconsistencies. For example on p. 171 (the Wildlife and Threatened/Endangered Plants and Animals -- Unavoidable Adverse Effects Sub-Section) under the Energy and Minerals Alternative it is stated by the staff, "Impacts would be the same as under the Continuation of Present Management Alternative, . . ." the sentence continues with "except impacts would be even more extensive due to the increase in energy development." The latter part of the sentence seems to indicate that there is a significant difference in impacts, not similarity. However, the reader and the decision-maker is left guessing as to the specifics of how much wildlife habitat may be affected. 10

It appears from reading the text, particularly the summary of impacts table on pp. 196 and 197, that an impact is significant if the affect on the environment is major and adverse. The definition of "significantly" in the CEQ regulations includes beneficial effects as well as actions which singularly may be insignificant but when added to other actions may be significant. Cumulative impacts have not been analyzed adequately. There are only two places where cumulative impacts are even mentioned. On p. 197, it is stated for all alternatives that "No significant, major adverse cumulative impacts to environmental elements due to management alternatives are foreseen." There is no evidence of any analysis in Chapter 4 which supports this conclusion. The only other place we found any discussion of cumulative impacts is on p. 171 where the DEIS states that cumulative impacts on wildlife and associated habitats would occur under the no action alternative. This statement contradicts that on p. 197. In addition, we believe, if cumulative impacts were analyzed for all alternatives, there is the possibility of cumulative effects to water resources, cultural resources, and land use for those alternatives involving greater development (whether mineral, timber, or agricultural) than the 11

continuation of present management alternative. 11

DEIS Lacks Specified Mitigation Measures

The DEIS makes many references to mitigation measures and stipulations attached to leases but contains no analysis of how effective these are nor even examples of what they may be. The reader is left to guess at them and to hope that the unsupported conclusions that everything will be okay. They are based on divine guidance. The staff that has prepared this document seems to assume that if there are mitigation measures and stipulations which are applicable to any of the earth-disturbing activities, that there will not be any irreversible or irretrievable commitment of resources. This is not necessarily true. For instance in the case of cultural resources, although cultural resources are salvaged and/or documented as best as present day techniques allow, there is always the loss of scientific information which could be retrieved with future methods and techniques. As another example, there are ecological niches which are generally small in size composed of particular associations of plants, animals, soils, and water. These niches are difficult and costly to duplicate and most often are not recreated unless it is found to be of critical concern to certain species. Often times a mitigation measure is just that -- an enhancement of an area other than the area that is proposed to be disturbed -- a compensation for the area that may be irretrievably lost. 12 154

It is true that if properly implemented, monitored, and modified where appropriate, that mitigation measures to reclaim an area can help. However, we find in most instances throughout the Chapter there are no qualifying statements of any kind. Rather it is assumed that mitigation measures and stipulations will mean successful reclamation. 12

The discussion of vegetation impacts associated with the economic benefit alternative (second paragraph, p. 166) is one of the few discussions where the success of reclamation is qualified by acknowledging it is not guaranteed and in

fact could take a longer period of time than predicted because of harsh climate. We believe the RMP/EIS and in particular the impact analysis should contain information that is accurate, detailed, and as scientifically based as possible.

SPECIFIC COMMENTS BY TOPIC

The Preferred Alternative

In contrast to the principles of multiple use and sustained yield management outlined in FLPMA and BLM planning regulations, the PA gives priority to livestock, timbering, and energy and minerals development throughout almost the entire resource area, and proposes, in effect, to manage what resource values are left after development for other uses. In particular, the so-called management programs for wildlife, recreation, watershed and conservation of resources for future land uses consist, for the most part, of a listing of possible management actions that may be used (successfully or unsuccessfully) to mitigate or reduce the impacts of energy development, grazing and timbering on these other land uses. FLPMA clearly requires much more balanced use of public lands, "with consideration being given to the relative values of the resources (to present and future generations) and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output" (PL 94-579 Sec. 103(c)). From the information available within the DEIS itself, it is apparent that recreation, wildlife, watershed, natural scenic and historical values are all extremely under emphasized in view of their values to the public in relation to the highly commercial land uses which receive priority throughout the resource area (see Recreation and Timbering Sections). 17

Coal Resources

All the alternatives except the no action one include additional coal leasing in amounts ranging from 13,000 to 107,000 acres. Colorado presently has about two billion tons of coal under Federal lease and one billion tons under Preference Right Lease Application of the total recoverable Federal coal resources. These Colorado coal figures are 12 percent and 18 percent of the total recoverable reserves.[1] The Office of Technology Assessment found, after completion of their exhaustive study, that over the next decade the State of Colorado could increase coal production from existing leases by 25-30 million tons of new annual capacity, if there is a demand from expanded markets. This is more than double the current production. This predicted increase in production would come from new mines with pending mine plans and from undeveloped leases.[2] In addition, as is stated on p. 184 of the draft RMP/EIS, the coal market is soft at present with the costs of coal transportation particularly inhibiting to a rapid increase in production. For these reasons, the inclusion of new areas for coal leasing in the Resource Management Plan is not justified nor does the DEIS analysis support an increase. It must. Should the preferred alternative retain opening new areas for potential coal leasing, we are further concerned that any leasing at the present time and five years hence, or until the market recovers, would result in payments to the U.S. well under the fair market price. Such a sale "in the interest of long-range energy needs" is neither justified nor a wise investment of public resources. No consideration of this factor is presented in the formulation of alternatives. 37

In addition to failing to justify new coal leasing, the DEIS lacks analysis

[1] "An Assessment of Development and Production Potential of Federal Coal Leases." Office of Technology Assessment. U.S. Congress, December 1981, p. 64.

[2] Id., p. 20

and fails to present accurate information on the timing of potential coal leasing, the relationship of the land use plan to coal leasing, and specific components of BLM's planning system. 35

Surface owner consent is discussed on pp. 82-83. The DEIS states that "miners would have to obtain the consent of surface owners before mining could take place" (p. 83). While this is true for private lands, on federal coal lands, surface owner consent must be obtained before leasing. The right to refuse consent is exercised during the activity planning stage. §3427.2(a)(2), and the EIS must explain this system correctly. In addition, the DEIS states that surface owners were surveyed for their preferences and of 32 percent who responded against leasing, 38

> "No specific area, community or logical mining unit contained a significant number of landowners. Therefore, all suitable areas in the McCallum Coal area would be considered for future surface coal mining." p. 83

No acreage figures are given and no explanation is given as to what amount of acreage (number of landowners is irrelevant) BLM would find "significant". What is? Further, are any logical mining units affected? How? The issue here is the apparent failure of BLM to use the surface owner consultation as a tool in land use planning, as it was intended, in the Kremmling RMP. 40

The discussion of the application of unsuitability criteria described on pp. 82-83 has left us confused. Table 3-2 appears to summarize the "preliminary application" of the criteria on the entire area, but not the existing leases or the PRLA C-0125854. What is the table? 42

No discussion is included that clarifies the method and timing of how the office will process the PRLA. This information is particularly critical because the EIS states "This RMP also evaluates the Preference Right Lease Application C-0125854 for environmental impacts" p. 11. In discussion with the Area Office Mr. Adrian Meisius suggested that a "major environmental analysis" may be prepared 39

before approving or denying the application. What is a "major environmental analysis?" The steps must be explained in the EIS for both future competitive coal leasing in the area and the PRLA. We would emphasize that this EIS performs no analysis of the PRLA, it merely mentions its existence several times. The Bureau must comply with the decision in Natural Resources Defense Council, Inc. v. Berklund (CA No. 75-0313, U.S. Dist. Ct., D.C., Judge June L. Green) and prepare an EIS which fully meets the requirements of NEPA and Judge Green's order.

In sum, there seems to be little apparent connection between this planning effort and the coal leasing and management program in this area. It is as if they are on two entirely different tracks instead of coal leasfng and management arising together from the land use planning. No supportable analysis is presented in a general way of the impacts of coal leasing on other resources, and the statements that are made are shallow or untrue to the point of absurdity. (See, for example, the Specific Comments by Page Number regarding pp. 157 and 166.)

Range and Grazing

The EIS states that in the settlement of a lawsuit filed in 1973 contending that BLM did not comply with NEPA with respect to its grazing program,

> "...BLM agreed to prepare grazing EISs according to an agreed-upon schedule. The RMP will meet this objective." (p. 11)

While the DEIS apparently meets the schedule, it does not contain the substance of an EIS required by the Court's judgment to assess actual environmental impacts of permits and to comply with NEPA in all respects. Natural Resources Defense Council, Inc. v. Morton, 388 F. Supp. 829 (D.D.C. 1974), aff'd., 527 F.2d 1386 (D.C. Cir. 1976), cert. denied, 427 U.S. 913 (1976).

First, the DEIS fails to assess the "no livestock grazing" alternative which constitutes the "no action" alternative required by the CEQ regulations 40 CFR 1502.14(d)(1982). This alternative is needed to allow the public and the decision-maker to make a reasoned choice about how much grazing, if any, should be permitted in the area. BLM asserts that "a fully detailed analysis has been developed" of a no grazing alternative, and that this "is available as a separate document for review at the Kremmling Resource Area Office" (p. 72). This analysis must be included in the supplement to the DEIS, not a separate document, so the public may review and compare it to the other alternatives. 63

The DEIS lacks the full range of "reasonable alternatives" required by the Court's Amended Final Judgment in NRDC v. Morton (see cite above). The range is a one percent change. The Continuation of Present Management Alternative (No Action) purports to contain a livestock reduction of 13 percent from the current licensed use of 45,648 AUMs to 39,726 AUMs (p. 3). Of the other six alternatives, four have reductions identical to the so-called no action alternative, and two have a reduction of 14 percent to 39,265 AUMs (pp. 4, 5, 137, 143). 64

Despite the failure to include a full range of alternatives, we were planning to commend the Bureau for contemplating a reduction of livestock use because of the unsatisfactory range conditions, given its past reluctance to consider reductions as one of the management tools to bring use within the capability of the range. However, on p. 63, we discovered that the average actual use has actually been only about 39,000 AUMs. The reduction is only a paper exercise and points out that the users recognize the poor condition of the range. So much for guts and glory. 65

One of the few quantified facts the EIS does contain is the information that BLM has evaluated forage conditions on 225 of the 311 grazing allotments and found 83 percent, or 233,196 acres, in "unsatisfactory" condition (p. 88, Table 3-7). Information is lacking on site-specific,allotment by allotment, forage conditions, erosion, types of plants and soils. This information must 66

be presented for the public to evaluate. The DEIS prescribes intensive management in most of the alternatives according to three levels. The management actions for each level are general and are not specific to sites. They include such actions as "ranking allotments to receive priority management, beginning with those that have wildlife/livestock forage or habitat conflicts and watershed and water quality problems associated with livestock grazing use," "adjusting stocking rates to proper allocation levels in accordance with the range condition inventory/monitoring studies data"; and conducting comprehensive monitoring studies which "include the collection of actual use utilization (sic), and climatic data in the short term to supplement inventory data". No information and analysis are presented to support the conclusion that these so-called actions will result in range improvements and what evidence is presented give every indication that the range will continue to deteriorate. 67

Similarily, most of the alternatives claim they will result in a long-term increase in forage production without adequate explanation or analysis.

For example, selection of the preferred alternative is claimed to result in 53,535 AUMs (p. 116 and Table 4-13, p. 196). No specific projects are identified to support this claim, although there is a list of total projects by type and cost in Table 3-17 (p. 149). Of the total $1,055,000 cost, 40 percent derives from brush control projects. Yet, the DEIS states that many of the brush control projects (brush beatings, plowings, sprayings, and seedings) have no available comparison data to determine success" (p. 89). Where will BLM get the money for a six-fold increase over the present budget? What is the cost-benefit of the projects? 68

In addition, the potential adverse impacts from the range improvement projects are not analyzed or even acknowledged. For example, the preferred alternative lists 21,000 acres which may be sprayed with herbicides to kill what BLM considers undesirable vegetation (Table 3-27, p. 149). The herbicide 2, 4-D is the preferred chemical, according to Mr. Neisius. Yet, 2, 4-D has caused birth defects in animal tests, contaminates water supplies, and has been shown to concentrate in the fatty tissues of animals. Furthermore, the carcinogenicity tests provided to EPA were done at quality levels well below today's standards.* 70

*Lawrie Mott, Pesticide and Herbicide Consultant to Natural Resources Defense Council, Inc., 25 Kearny Street, San Francisco, California.

Recreation

Tourism and recreation are at present the second most important industry in the region's economy. However, recreation -- along with related resources such as visual quality and wildlife --are extremely underemphasized in the PA relative to their economic importance to the area as well as the quality-of-life they provide for residents. As the DEIS notes, BLM lands directly support many forms of dispersed recreation, in addition to the supplementary role they play in relation to surrounding National Forest and Park lands. BLM lands not only accommodate recreational "spillover" from surrounding forests, they provide visual "butter zones" and crucial habitat for many animal species which are essential to the ecology and recreational uses of the surrounding country.

According to the DEIS/RMP recreation and tourism demands are expected to increase significantly in the future, providing the primary source of growth in the area's economic base (p. 184). Demand for dispersed recreation in Middle Park, for instance, is expected to increase 12 percent in the next five years, making existing limited recreational management inadequate to provide for this increased demand (p. 108).

Despite these conclusions, the PA gives timbering and livestock grazing the priority land use in almost all of the existing recreational management areas. Why? A quick comparison of Figure 2-4 (p. 48) with the PA map, shows that timbering is given priority in eight of the existing 15 recreational areas in the region. In two others, livestock is given priority, while energy development is given priority in one of the remaining five areas. Although Chapter Two cites recreation and timbering as compatible uses, we question whether people actually recreate in clear-cuts. In fact, the extremely sketchy information in the DEIS seems to support our fear that significant recreational values are being sacrificed in a trade-off for an extremely minor increase in 127

timber production. The Renewable Resources Alternative (RA) and the Natural Environment Alternative (NEA), for instance, both state that by shelter cutting (as opposed to clear-cutting) in some areas, visual and other environmental values could be maintained and timber production would be decreased from a maximum of 5 million board feet to a minimum of 4 million board feet (pp. 138, 143). With recreation/tourism playing an increasingly more important role in the area's ecology, visual management -- how the region looks to visitors -- should also be an increasingly important concern. Management activities such as timber management, mining, oil and gas development, and additional road-cutting should be planned and carried out in a manner that does not impair scenic vistas from existing roads, trails, and important landmarks on BLM and surrounding National Forest and Park lands. 127

Due to the economic importance of recreation/tourism to the area, preserving recreational and scenic values would also undoubtedly have a significant economic value which the DEIS fails to recognize. The assessment of economic impacts in Chapter 4 is explicitely based on the extremely questionable assumption that "the total number of recreation visits to the resource area is determined by factors largely uneffected by BLM programs" (p. 186). Consequently, the DEIS concludes that favoring other land uses over recreation and preservation of natural values, or vice versa, would have no significant economic effect (pp. 182-184). This assumption, and the conclusion that follows, are contradicted by other statements in the DEIS which suggest exactly the opposite is true: BLM lands play a vital role in directly providing recreation and supplementing recreation on adjacent lands, and, therefore, BLM programs that preserve or enhance recreational opportunities would have a significant positive effect in the area's economy and quality of life of residents. 126

Timbering

The DEIS states that land-use decisions contained in the RMP will be combined with new inventory information to determine the new allowable harvest in 1987 (p. 95). Therefore, we stress the need for BLM to use the RMP planning process to identify and designate additional land to be withdrawn from the base used to calculate the annual allowable harvest for what BLM terms "multiple use consideration." In order to be consistent with the principles of multiple use and sustained yield, the annual allowable harvest should be set at a level which will leave enough undisturbed or fully-reclaimed forest to meet demand for other present and future land uses besides timbering. Due to the increasing demand for recreation and related resources in the Kremmling area, the ultimate primary value of many forested areas undoubtedly lies in recreation and preservation rather than timbering (see Recreation Section). Once an area is clear-cut, for instance, its capacity to meet recreational demand for natural areas undisturbed by man is permanently lost. Similarly, natural areas are needed to provide research information and baseline measurements. In addition, we note that, contrary to the assumption that old growth forests are unproductive for wildlife, recent information indicates that leaving some old growth can have extremely high wildlife as well as recreational value. While recent clear-cuts may produce additional forage, for instance, increased snow accumulations may make this forage less accessible in crucial months (see "Wildlife Needs Virgin Forest," Forest Planning, July, 1981). 78

The amount of land withdrawn for other land use from the manageable timber base under the 1977 inventory appears relatively small (6,248 acres), and should logically be increased to reflect growing demand for recreation/tourism in the areas. In addition, we would like to note that increasing the annual allowable

cut by considering 10,000 acres of economically unaccessible lands as "manageable", as the Economic Development Alternative proposes (p. 127), would clearly violate the mandate that forests be managed on a sustained yield basis, and therefore should not even be considered.

Wilderness

The Bureau seems to dismiss recommending Troublesome Wilderness Study Area (WSA) from wilderness designation primarily because "its relatively small size limits (its) capability...to meet increasing demands (for wilderness in Colorado)" (p. 109). Rather than providing a logical reason for not recommending this area for wilderness designation, this statement merely emphasizes the imminent need for additional wilderness in this area. As the DEIS notes, the rapid increase in wilderness use in surrounding areas has led the Forest Service to already begin plans for restricting use through a permit system. Although it may be true that the Troublesome WSA may not fulfill the total increase in demand for wilderness use, failure to designate this WSA will only worsen the problem. Recreation and tourism is the second most significant element in the regional economy, and a protected roadless area would add considerably to the economic as well as social well-being of the nearby towns of Walden, Hot Sulfer Springs and Kremmling. 145

In addition to underestimating the recreational value of the Troublesome WSA, BLM's analysis seems to ignore the other multiple-use values wilderness inevitably enhances, such as watershed, wildlife and conservation for future land uses. Merely because the area does not cover an entire watershed or ecosystem, does not mean these values would not be enhanced by wilderness designation, as the DEIS concludes. Keeping areas like Troublesome in their undeveloped state will be increasingly important to support wildlife populations as private development destroys or degrades much of the existing habitat in Middle Park. Preservation of the Troublesome area, in particular, is crucial to maintaining the existing elk populations in Middle Park. 94

Finally, the resource uses that would be precluded by wilderness designation are negligable in comparison to the benefits of wilderness mentioned above. Motor vehicle use, livestock grazing, and energy and mineral exploration is 146

minimal and presents no significant conflict with wilderness designation. The value of timbering that would occur if the area is not adopted as wilderness would be significantly offset by the cost of road construction alone, while existing recreational, scenic, wildlife and watershed values would be degraded significantly, to the point where the market value of timber resources in the area would be totally offset by the "opportunity cost" of foregone wilderness values. 146

Wildlife

The Preferred Alternative (PA) identifies 329,000 acres of upland and wetland habitat out of 398,275 total acres of public land in the resource area as "critical" or "important" for wildlife, and states that "emphasis would be placed on intensely managing" these areas (p. 116, 104). This contradicts the low priority actually given wildlife and ongoing conditions in the PA. In fact, areas where wildlife and habitat would be protected or given priority over other land uses appears to be a very small percentage of public lands in the area -- maybe 10 percent (Map 3). On most of the land in the resource area, wildlife and habitat would be maintained only as long as it does not conflict with other higher priority uses, which are almost entirely energy development, livestock and timbering in the PA. Although the DEIS defines these other land uses as generally compatible with wildlife, the cumulative impacts of such commercial land uses clearly create serious conflicts with wildlife. The DEIS itself notes, "habitat reductions are occurring rapidly in the resouce area because of the development of subdivisions, access roads, recreational facilities, vegetation modification (for livestock) and mineral operations" (p. 98).

We would expect this declining trend in habitat to continue under the PA due to the increase in activities such as disposal of public land for private development, energy development in North Park, and eradication of sagebrush ecosystems to increase livestock forage (p. 171); nevertheless the DEIS concludes that "wildlife habitats and populations would be expected to increase in this alternative, except in the coal development area" (p. 169). The PA provides absolutely no basis for this strange conclusion; in fact, the only factors noted in the DEIS as having a potentially positive impact on wildlife are forest management practices, which could result in "additional edge effect, road 95

closures, and increased wildlife forage production" (p. 169). However, probable adverse impacts of timbering are also acknowledged, such as "loss of snags, access to previously undisturbed areas, and displacement of certain species during critical seasons" which could offset any so-called benefits to wildlife from timbering (p. 169). In addition, each of the alternatives sets population goals for deer, elk and antelope, but fail to give similar attention to other forms of wildlife or habitat needs which are the key to sustaining wildlife populations overall. 95

In short, the many negative and few positive impacts on wildlife noted in the DEIS just do not add up to the conclusion that wildlife will be maintained at the present levels. In practically the entire resource area, energy, mineral and timber development, and livestock grazing are given priority over wildlife. BLM seems content to manage whatever habitat is left for wildlife after commercial land uses are conducted, rather than determining minimal wildlife needs and setting these aside or using specific preventative measures to guarantee habitat quality over time.

SPECIFIC COMMENTS BY PAGE NUMBER

-- p. 18, p. 74, 170 and throughout document - We find the use of the terms "vegetative manipulation" and "sagebrush manipulation" to be aberrations of any scientific terms based on range management or plant ecology. Since there is not any basis for their use other than "bureaucrateese" that the public must decipher, we urge their deletion and the insertion of the specific methods or techniques that are being referred to in the particular sections. There would be far less confusion as to what is the method or management technique proposed to be used in an alternative. 71

-- p. 18 - We believe that acronyms should be spelled out to assist the reader in the first Chapter. 25

-- p. 155 - Under the Energy and Minerals and Economic Benefit Alternatives it is stated that the impact on air quality is expected to be minimal due to mitigating measures to be implemented to meet Office of Surface Mining (OSM) and State air quality standards. We note that the Office of Surface Mining does not set standards. OSM coordinates any review of air resources related to a site-specific coal mine with the State. National Ambient Air Quality Standards set by EPA and adopted by the State are used in the review. They emphasize that OSM only regulates coal mining and not other minerals. In addition, the primary responsibility for mine plan review and analysis lies with the State of Colorado under a Cooperative Agreement with the Office of Surface Mining. 26

-- p. 156 - Under "Committed Mitigation Measures", the same misleading statement appears concerning air quality standards. Also this paragraph is confusing because stipulations on coal leases are prepared by the Bureau of Land Management -- not OSM. 26

-- p. 156 - The discussion of "unavoidable adverse effects" under "locatable minerals" is inadequate. More detail should be provided on possible effects of subsidence (should subsidence occur in a given area). 46

-- p. 157 - In the discussion of effects of the coal resource, the staff states that surface mining and subsidence would not necessarily have an adverse effect on topography. It is further stated that "To the contrary, increased grazing and agriculture could result from slope modification and reclamation." This sounds like a justification to mine the area and we find such a statement very misleading. Documentation should be provided to substantiate that grazing and agriculture have increased after reclamation of surface mined land to the standards in the Federal Coal Act. We know of no supporting studies. 47

-- p. 158 - Committed Mitigation Measures -- We agree that standard and special lease stipulations, NEPA compliance, and approval of a mine plan often identify mitigation measures that can and/or are to be implemented at a specific site. However, in order to be effective, and successful, mitigation must be monitored stipulations enforced, and appropriate adjustments made when particular problems of implementation arise. The DEIS should address the full scope of mitigation, enforcement and monitoring. 48

-- p. 160 - We find the introduction to soils to be biased to the construction industry with the definition "a substance with properties which must be overcome in order to achieve human goals". We also note in the bibliography the reference to Design with Nature by Ian McHarg. Obviously, not all staff have been privy to this book. 179

-- p. 161 - We find it hard to believe that there would be no unavoidable adverse effects to soil with implementation of any of the alternatives. Once soil horizons are removed and stockpiled, there is a loss of nutrients, productivity, and microbiological activity in the short-term. In the long- 180

term, even though the soil may be properly replaced, the original structure of the soil horizons and types is not usually replicated on reclaimed land. We note that the next section does recognize there are short-term impacts to soils but these short-term impacts are not named nor discussed in any detail. 180

-- p. 162 - Again, we note that the prime responsibility for coal mine review is shared by the State of Colorado and OSM under a Cooperative Agreement. Therefore mitigation measures include those appropriate sections of the Colorado State Statutes and regulations as well as any stipulations prepared by the State or OSM. 49

-- p. 164 - In the description of impacts to water resources, under the recreation alternative, it is stated that there would be potentially 12,800 acres of prescribed burning. This fact is not mentioned in Chapter 3 which is supposed to be a thorough description of the alternatives. We wonder how many other things are not specifically described in Chapter 3 or are disguised in the term "vegetative manipulation". 72

-- p. 165 - We find the description under "short-term use vs. long-term productivity" to be inadequate. The statement that is provided is generic and could be placed in a seventh grade science book under the general topic, "water resources." According to the CEQ regulations 40CFR 1502.16, the impact section is supposed to be analytical in nature.

The conservation potential of various alternatives as well as energy requirements of the alternatives are to be discussed. The lack of specificity in this section makes it impossible to determine if there are significant impacts. 55

-- p. 165 - It is stated under "Committed Mitigation Measures" that "committed mitigation includes compliance with Office of Surface Mining regulations for coal leasing." Again, the Office of Surface Mining regulates coal mining in cooperation with the State. Our comment on p. 158 concerning committed 56

mitigation measures is applicable to this page. We also note that the Federal Water Pollution Control Act is incorporated in the amended Clean Water Act. 56

-- p. 165 - Vegetation -- We disagree with the analysis presented at the bottom of the first column and top of the second column that, "Timber management programs produce the only discernable impacts to forest vegetation" and that "this management only alters the size, age, stand productivity, and composition of timber, rather than producing any change in the forest environment." We find this statement to be a contradiction as well as contradicting the two hypotheses, at the beginning of the section, on what constitutes a significant impact. Altering the size, age, stand productivity, and composition of a forest certainly changes the environment for users of that forest, both human and wildlife. Certain wildlife are associated with particular kinds and ages of forests. If that particular forest which is habitat to a particular species is clear-cut the population is harmed. Such a cause and effect can produce stress, starvation from competition for remaining habitat, if any, and eventually reduction of a species in certain circumstances. We find that this kind of analysis of the interrelationship of resources and users, an ecological approach, is lacking here and throughout the environmental consequences section. 77

-- p. 166 - There is a lack of environmental impact analysis to compare the different alternatives, and with conclusions such as the following, the reader is left wondering if there are differences between management alternatives. "The beneficial impacts to vegetation associated with the proposed intensive range, forest, and wildlife practices [u]nder the preferred alternative -- si[c] would be comparable to those in the Renewable Resource Alternative." 43

Under the "Energy and Minerals Alternative" the same lack of analysis is present. We wonder why vegetation impacts from coal development are not discussed under this alternative because coal development is part of this management alternative.

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-- p. 166 - Economic Benefit Alternative -- As with the comment made on p. 157, the statement that reclamation of coal mined lands "would be expected to increase vegetation productivity over that found prior to mining" must be documented. This sounds like the discredited motto of some coal companies, "We can put it back better than it was before." 44

-- p. 166 & 167 - Renewable Resources and Recreation Alternatives and the Natural Environment Alternative -- "Sagebrush eradication" applied to hundreds of acres would not improve wildlife habitat as many species such as sage grouse and antelope depend upon older stands of sagebrush for cover. These species require young plants for forage in addition to older plants for cover. Burning that is done in small areas (spots) could be beneficial to wildlife. However the staff has not qualified properly the judicious use of this method to improve wildlife habitat and evaluated which wildlife species would be harmed and which would benefit. 102

-- p. 167 - Unavoidable Adverse Effects -- In the Energy and Minerals and Economic Benefit Alternatives, it is stated that the removal of vegetation during energy development is an adverse impact over the short-term but this kind of impact is not considered "unavoidably adverse" because mitigation measures would be employed to reclaim the area. We believe that the removal of vegetation over the short-term is an unavoidable adverse impact and should be stated as such. In the analysis in the last paragraph of the page, it should be stated that vegetation would be removed and, even though regionally isolated, would constitute at least a short-term, adverse impact and may be a long-term adverse impact (as stated on p. 168). Also, here and throughout, the staff had adopted a presumption that successful reclamation can be accomplished in the RMP area. We know of no successful reclamation on coal mines in that area -- indeed there could not be because no mine has completed the 10-year minimum requirement 73

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of the federal act (PL 95-87, Sec. 515(b)(20). We believe also that an estimate of the vegetation loss in terms of AUM's or income should be given for both the short-term and long-term use of this resource for energy development. 73

-- p. 168 - Wildlife and Threatened/Endangered Plants and Animals -- We believe that the first paragraph describing impacts conflicts with other analyses presented in this section. In particular, on p. 171 the discussion of unavoidable adverse effects, item 2, includes cumulative impacts which are described as becoming "crucial as energy development proceeded in North Park". Crucial seems to imply that there would be a significant impact to wildlife and their habitats. 103

-- p. 171 - We find it difficult to believe that unavoidable adverse effects on wildlife would be the same for all seven alternatives. The brief explanations provided indicate that impacts may not be the same at all. Further detail is required to explain what is meant by "Impacts would be the same as under Continuation of Present Management Alternative, except impacts would be even more extensive due to the increase in energy development." Another term used is that impacts would be the same but would be "more widespread . . . ." Again, this implies that impacts are in fact not the same. More detail of the analysis which has been performed is required to adequately satisfy the requirements of the CEQ regulations. 103

-- p. 172 - Short-term Use vs. Long-term Productivity -- There is no discussion of the effects of wildlife displacement during energy development and timber harvest in item 4. 103

-- p. 174 - The specific impacts of energy development on recreation are discussed under each management alternative. We note that a brief analysis of energy development and recreation is included in the section on "unavoidable adverse effects". The management emphasis on recreational resources even in the Recreation Alternative is not done to the same degree of detail as is the energy and 131

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minerals alternative, economic benefit alternative, and preferred alternative in emphasizing mineral development. Recreational resources must receive more analysis in the final. 131

-- p. 174 - Present Management Alternative -- In the last paragraph, the implication is that Forest Service lands are not public lands from the statement made in the first sentence. 132

-- p. 176 - Unavoidable Adverse Effects -- The preferred alternative should be included in the first sentence. 133

-- p. 178 and p. 182 - Irreversible or Irretrievable Commitments of Resources -- As mentioned in our general comments, if disturbance of a resource will be done in compliance with regulations and/or stipulations this does not necessarily mean there will not be a significant impact to that resource. We believe such is the case with cultural resources. Even with retrieval of cultural resource information prior to surface disturbing activities, there is a loss of scientific information that could be obtained in the future with new methods. 154

-- p. 179 - The first paragraph, first sentence under the "economic benefit alternative" is confusing and awkward. If the resources would be "the most negatively impacted under this alternative" but there would not be a significant adverse impact to this resource, does this mean impacts to cultural resources would be moderate or minor? 181

-- p. 180 - We note the discussion under the Recreation Alternative that there are "significant cultural resources" in the area. We find it confusing if there are significant cultural resources in the area why under every single alternative, even the "economic benefit alternative," there are no significant impacts to this resource. Again the language used to describe the magnitude of impacts is unclear in the "natural environment alternative", particularly the second sentence. 158

35 52

-- p. 181 - In the last sentence of the same alternative, the staff states "All of BLM's [sic] assumed roles for protection, preservation, enhancement and development could be realized. What is meant by the term BLM's assumed roles? 159

-- p. 181 - Unavoidable Adverse Effects -- What is meant by "project parameters" in the sentence "If project parameters cannot avoid even significant sites, then these sites can be mitigated through salvage, with detailed information being lost in the process." 160

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1037 20th Street
Denver, CO 80202

Dear Mr. Francis:

Thank you for the opportunity to comment on the Kremmling Resource Management Plan and Environmental Impact Statement. We have the following comments:

1. In the preferred alternative, the Lands and Realty Section contains a subsection titled "Ownership Consolidation." In the subsection they are considering the sale of "tracts in Grand Lake, Granby and Fraser areas." We encourage you to consider further the effects of this action on big game winter range. Most of the Silver Creek area serves as big game winter range, and as Silver Creek develops, the interspersed BLM lands may be the only winter range available to the animals. 174

2. Chapter 2, Affected Environment, page 37, Surface Water Quality, Colorado Basin. No mention is made of the presence of Giardia in the surface water. 52

3. Chapter 3, Preferred Alternative, page 116, Terrestrial Wildlife. You state that you only have three miles of important riparian habitat. It is hard to believe that only three miles exist in the entire unit. Is this a typographical error? 96

4. Chapter 4, Environmental Consequences, Wildlife and Threatened/Endangered Plants and Animals, Preferred Alternative, page 168. As the BLM manages a good deal of critical big game winter range, mention should be made of how you plan to manage that resource. We recommend you consider and address the use of prescribed fire. 97

Sincerely,

Craig J. Rupp

CRAIG J. RUPP
Regional Forester

'83 MAY 24 AM 10:00

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Atlantic Richfield Company | 555 Seventeenth Street, Denver, Colorado 80217, Telephone 303 575 7577

J. R. Mitchell
Public Lands Coordinator

May 25, 1983

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

Re: Kremmling RMP/DEIS

Dear Mr. Belisle:

Atlantic Richfield Company appreciates this opportunity to comment on the Kremmling Draft Resource Management Plan and Draft Environmental Impact Statement. We fully recognize the value of this management plan and the attention given to energy and mineral resources in the development of the plan. Quite often industry does not take the time to extend its appreciation to the agencies for good work and as a consequence, you may not receive many replies. If I may take the liberty, on behalf of Rocky Mountain Oil and Gas Association and its members, as Chairman of the Public Lands Committee to voice our appreciation for your effort. To our knowledge, for the first time in this type of planning there is a published energy and mineral alternative.

The plan fulfills many of the objectives necessary with respect to energy and minerals. Land use priorities are specifically addressed, potential conflicts are identified, the agency which will resolve the conflicts is identified, and limitations on use are described. In the case of energy and minerals, these limits include restrictions on leases, development plans, and proposed stipulations designed to contribute to conflict resolution. In this resource area energy companies will know up front what to expect as the plan is implemented.

Oil and gas leasing is listed as a "compatible use" in each section addressing another land use priority, with the sole exception of wilderness. Environmental protection throughout the plan is still obvious, especially in terms of soil, water quality, threatened and endangered species. The industry has always been able to live with such protections, and we see no unreasonable imposition of restrictions. For the first time in any such plan, where oil and

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Harold Belisle
May 25, 1983
Page 2

gas exploration and development are listed as priorities, other uses are allowed with constraints to avoid conflict with the development of the oil and gas. Only wilderness and coal leasing are "excluded uses" on oil and gas priority lands.

Atlantic Richfield has no particular conflicts with the proposed alternative and could support the adoption of either the energy and mineral alternative or the preferred alternative.

Thank you for the opportunity to express our thoughts and concerns regarding the Kremmling Plan.

Sincerely,

J. R. Mitchell

J. R. Mitchell

JRM:drm

55

915 Prospect Street
Takoma Park, MD 20912
May 22, 1983

Area Manager
Kremmling Resource Area
Bureau of Land Management
P.O. Box 68
Kremmling, CO 80459

Dear Sir:

Thank you for this opportunity to comment on the Draft Resource Management Plan and Environmental Impact Statement on the Kremmling Resource Area. I and members of my family have spent many days hiking and fishing in the areas surrounding Troublesome Creek and Arapaho Creek over the past 20 years, and I have hiked from the Arapaho Ridge area down Rabbit Ears Creek. This is truly a remote and pristine area offering significant opportunities for solitude. My comments will be directed primarily by our interest in the Troublesome Wilderness Study Area, although I have some other comments on your plan as well.

First I would direct you to read the summary of our proposal for managing the Arapaho Creek/Troublesome Area that is incorporated in these comments (see attachment). Note that we are interested in the coordinated management of an area corresponding to your original boundaries for the Wilderness Study Area and areas within the Arapaho and Routt National Forests. We were encouraged by your inclusion of the Troublesome area under BLM jurisdiction in your list of Wilderness Study Areas statewide and by the descriptions provided of the outstanding recreational opportunities that this area provides in its preserved state. However, we were disappointed by your recommendation not to take the area seriously as worthy of preservation. We find this recommendation to be inconsistent not only with the natural characteristics of the area, but also with the increasing demand for primitive and wilderness type recreation as described in your planning documents and those of the Forest Service (for example, see the Draft Plans for the Arapaho Roosevelt National Forest and for the Routt National Forest). More specific comments that should be addressed in your final plan and EIS are as follows.

1. Your draft plan states (p. 109) that the Troublesome WSA would "not add balance to the geographic distribution of wilderness areas." This appears to be a vague criterion at best, especially in light of your statements on the same page concerning the rapidly increasing demands for wilderness lands in northwest Colorado. What is important about the area is that it provides diversity in the Colorado wilderness areas by being one of the few areas that contains a substantial acreage below timberline. 135

2. The draft plan also states (p. 109) that the area's "relatively small size limits the capability of the Troublesome WSA to meet increasing demands." Such a statement is logically unsupported in light of the increasing pressures for wilderness use which you discuss in the previous 139

two paragraphs on the same page. Of course, an area of any size would help relieve the pressures on more heavily used areas. Furthermore, the size of the area (about 11,915 acres in its original designation and about 8,250 acres in the Draft Plan) is about twice the 5,000-acre minimum size considered appropriate for Wilderness Areas. Your recommendation and rationale are even more puzzling given the fact that this is the only WSA considered in your planning area in order to meet such public demands. 139

3. You state (p. 109) that "the area lacks any geologic, ecological, educational, scenic, or historical features significant enough to recommend their protection by wilderness designation." I think the scenic values are a matter of judgment, and I am not aware that the other criteria are necessary criteria for wilderness designation.

4. You state (p. 109) that "since the adjoining national forest lands are not under wilderness management, the Troublesome WSA would not afford protection to an entire watershed or ecosystem..." There are many areas within the National Wilderness Preservation System that do not encompass the entire upper portions of all watersheds. Reference to the Draft Routt National Forest Plan indicates that the areas upstream of the Troublesome WSA are to be managed with emphasis on wildlife habitat (above Rabbit Ears Creek) and with emphasis on semiprimitive nonmotorized recreation (along Troublesome Creek) in the preferred alternative. It is unclear how such management prescriptions would interfere with management of the BLM area as wilderness. Your statements that the Forest Service lands are not legally designated wilderness or that the Forest Service management of adjacent areas could change at some future date appear to be somewhat beside the point and speculative. Your final Plan and EIS should address the specific management problems that would arise from lack of coordination with the Forest Service managers or land designations in their preferred alternative in more detail. 141

5. In your preferred alternative you designate the Troublesome WSA for grazing use and for forest products. Grazing would not be incompatible with wilderness designation. The production of sawtimber from these areas is probably uneconomic, given the cost of roadbuilding to achieve access and the quality of the timber resource. Please refer to our comments to the Forest Service on the existing federal practices that provide subsidies to what would otherwise be privately unprofitable timber production (see attachments incorporated into these comments). Your final plan should analyze the economics of timber production in the Troublesome WSA. Unless there is a finding that the lands within this area are economic for timber production their designation should be changed to that of grazing use or wilderness.

6. We recommend that ORV use be eliminated from the Troublesome WSA in your preferred alternative. Given its values, such a use should be prohibited, particularly because the relatively narrow valleys would mean that ORV use would damage the riparian habitat.

7. More generally we note that the Troublesome WSA is not restricted from ORV use under any of the other alternatives considered, save one.

Furthermore, only under one alternative are any areas out completely off limits to ORV use. To have only 2% of lands in such a category under only one alternative and 0% of lands in all other alternatives appears to be an extreme position favoring just one class of users of the public lands under your management. 116

8. Your description of transportation and access (p. 119) under the preferred alternative is so vague that it is impossible to assess the environmental effects of the preferred alternative or even to tell what the plan would allow, especially in the Troublesome area.

> Following the RMP, a transportation plan and map would be developed that would identify roads to remain open; roads to be closed; maintenance and improvement standards; available access; off-road designation; and coordination with local, state, and Federal agencies' road programs.

Such items are of great public interest and are the key to the impacts that large segments of the public have interest in. Forest Service plans (such as the Routt plan) are more specific as to the location of transportation routes. Your final plan should incorporate the elements and the map referred to on p. 119; these should not be post-planning documents. 13

9. The rationale for not including the Troublesome as wilderness is the same under various alternatives. Wouldn't the rationale vary depending on the nature of the alternative? 135

10. Your economic benefit alternative should be recast. Economic benefits in national plans should be measured from a national and not purely from a local or regional standpoint. These distinctions are made in standard texts on economic benefit cost analysis. (See also comment 5, above).

11. It appears that the Northern Sand Hills area should be restricted from ORV use. How will you be able to limit ORV use to just certain areas of the Sandhills, as your preferred alternative calls for? 119

12. As indicated above, we believe that the southeast corner of the original WSA should be restored in your preferred alternative. The road to Matheson Reservoir is primitive and could be restored to a natural state. This corner of the area is important when considered along with the adjacent Forest Service management (semiprimitive nonmotorized recreation).

13. One minor editorial comment is that page headings in Chapter 3 would make it easier for the reader to identify the alternative being discussed.

In summary, we believe that you should reconsider your recommendation on the Troublesome WSA and support wilderness use there. We have attached some general and specific comments on the Routt National Forest Plan (Draft) that are of relevance to your planning effort. We ask that you incorporate these attachments into our comments.

Sincerely,

Richard W. Wahl

Richard W. Wahl

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO
L7621 (RMR-PC)

MAY 19 1983

Memorandum

To: District Manager, Craig District Office, Bureau of Land Management, Craig, Colorado

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Review of Draft Resource Management Plan/Environmental Impact Statement on the Kremmling Resource Area, Colorado (DES 83/1)

The National Park Service (NPS) has reviewed the subject environmental impact statement from the Bureau of Land Management (BLM) and has the following comments:

GENERAL COMMENTS

In his September 19, 1980, memorandum to the Heritage Conservation and Recreation Service (HCRS), the Acting State Director for the Colorado State Office of the BLM requested that the Colorado River (Gore Canyon to State Bridge segment) be added to the Nationwide Rivers Inventory because of its outstandingly remarkable scenic, recreation and geologic values. In addition to the recommendation from the Acting State Director, the HCRS received recommendations from the Colorado Division of Wildlife for listing the segment of the Colorado River from State Bridge to the Blue River for outstandingly remarkable scenic, fish and wildlife values, and from the State Conservationist of the Soil Conservation Service for listing the entire segment of the Colorado River in Eagle County for outstandingly remarkable scenic, recreation, geologic and fish values.

After reviewing these recommendations and viewing the entire segment of the Colorado River from I-70 to the Blue River, the HCRS added the Colorado River from State Bridge to the Blue River in the Nationwide Rivers Inventory for outstandingly remarkable scenic, recreational, geologic and fish values.

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In the final environmental impact statement, we request that the Colorado River from State Bridge to the Blue River be described in Chapter 2, recreation section, as a Nationwide Rivers Inventory stream which has outstandingly remarkable scenic, recreational, geologic and fish values. Chapter 4 should then describe environmental consequences of the alternative plans on these outstandingly remarkable values. 128

We are concerned about a number of apparent discrepancies with regard to policies for wilderness and recreation resources. For instance, the proposed designation for the Troublesome Wilderness Study Area (WSA) changes between different management strategies. We have noticed this same policy being proposed in other BLM resource management plans for areas containing WSA's. In this case, the information on the Natural Environment Alternative makes a convincing case for designation of this WSA as wilderness. We also noted on page 53 that no significant potential for mineral development exists in this WSA, and on page 109 that through May 1981 there had been no proposals for activities inconsistent with the interim management policy.

However, none of the alternatives except the Natural Environment Alternative recommend designation of the Troublesome WSA as wilderness. The main reasons given for this are the relatively small size of the WSA, larger WSA's in the region (although none of them are in the Kremmling Resource Area), and the lack of significant features. In view of repeated references in the subject document to increased pressure on, and growing demand for, recreation resources due to a growing regional population, we question whether any of the above are sufficient reasons for a recommendation against wilderness designation. 148

Another "adverse impact" resulting from wilderness designation is found on page 156, which states that such designation "would preclude mineral activity by restricting surface occupancy, resulting in permanent loss of production." We find this statement puzzling in view of the aforementioned statements about mineral development (page 53) and proposals for activities in the WSA (page 109). It does not appear that mineral exploration or development activity can be expected in the WSA. Therefore, it hardly seems likely that wilderness designation will result in a loss of production when such production is not likely to occur. 147

Along those same lines, we are concerned about the differing recommendations for Special Recreation Management Areas (SRMA's), Areas of Critical Environmental Concern (ACEC's), and Natural Areas. Table 3-27, as well as information in the discussion of each alternative, shows that different management strategies will result in different numbers of designated and potential SRMA's, ACEC's, and Natural Areas. It seems inconsistent that except for the Recreation Alternative, the Energy-Mineral Alternative, which emphasizes mineral exploration and development, 129

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would encompass the largest number of acres in designated SRMA's. Similarly, the Economic Benefit Alternative, which would encourage multiple-use and economic diversity, includes four potential SRMA's totalling 36,160 acres while none of the other alternatives, including the Preferred and Recreation Alternatives, contain such a recommendation. 129

In reference to the Preferred Alternative, it does not appear that recreation would fare as well as it might under the Energy-Mineral, Economic Benefit, or Recreation Alternatives. While we do not expect that recreation would be highly emphasized under a program of management, production, and use of renewable resources, we would also not expect to see it receive less emphasis that it appears to under alternatives which would encourage higher levels of timber and mineral production. This situation is especially evident in comparing the proposed activities for the Troublesome WSA, which would (1) be recommended for wilderness designation under the Natural Environment Alternative, (2) managed for primitive and backcountry recreation under the Recreation Alternative, and (3) managed mostly for timber production and grazing under the other alternatives. We recommend that BLM consider management of this area for primitive and backcountry recreation under all the alternatives, regardless of whether it is designated as wilderness. This would help in meeting the aforementioned demand for recreation resources and would be beneficial in preserving the acknowledged wilderness characteristics of the WSA. 130

Pages 158 and 159 indicate that total acreage for coal, oil, and gas leases would increase under the Natural Environment Alternative and that long term production of coal would increase. Page 141 states that multiple use/sustained yield activities "would continue at sufficient levels to maintain existing industries." Maintenance and expansion, in this sense, are contradictory terms. We recommend that the final environmental impact statement clarify the extent to which mineral production would continue or expand under this alternative. If it is to expand, the discussion of the Natural Environment Alternative should be revised. 41

We are also puzzled by the apparent discrepancies in Table 3-27 with regard to cultural resources. The level of intensive management under the Continuation of Present Management and Preferred Alternatives is significantly lower than under any of the other alternatives. This presents a potential for higher levels of adverse impacts to those resources. It is also apparent from the acreage figures given for Intensive Management that the level of management for specific sites would differ between the alternatives. Again, we find it interesting that the alternatives emphasizing resource production and multiple use, which would normally pose a greater threat to cultural resources, actually provide for intensive management for much larger acreages than the Preferred Alternative. In the interest of protecting cultural resources, we suggest that management strategies should not differ between the alternatives and that BLM consider a revision of these proposals in the final environmental impact statement. 153

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The same goes for cultural resource inventories. The data in Table 3-27 shows even greater discrepancies between the alternatives and seems to indicate a reversal of priorities in determining appropriate management strategies. BLM proposes to inventory 12,000 acres under the Natural Environment Alternative, which would actually afford the greatest degree of protection to unknown cultural resource sites, but proposes to inventory only 4,000 acres under the Energy-Mineral Alternative and none under the Renewable Resources Alternative, both of which would probably have the highest degree of potential adverse impacts on unknown sites. This calls into question the conclusions in Table 4-13 about environmental impacts to these resources, especially the statement that there would be no significant degradation under the Renewable Resources Alternative. That could not be determined if no inventories took place. It would seem that, if different levels of inventory are necessary under different alternatives, the highest number of acres should be inventoried under those alternatives presenting the greatest threat to cultural resources. However, we believe that the best strategy would be to conduct the most thorough inventories possible under any of the alternatives. 155

Further, it is impossible to recommend different numbers of sites as eligible for the National Register of Historic Places under different alternatives, as suggested in Table 3-27. Specific criteria exist for determining such eligibility, none of which depend on whatever management practices may be in effect. Since page 201 does not indicate that the Advisory Council on Historic Preservation has been consulted or sent a copy of this document, they should be contacted immediately regarding potential National Register sites and given an opportunity to comment. We will expect to see documentation in the final environmental impact statement of BLM's compliance with 36 CFR 800 and Section 106 of the National Historic Preservation Act. 157

SPECIFIC COMMENTS

Volume 1, page 31, table 2-4: The correct size of Rocky Mountain National Park is 266,957 acres.

Volume 1, page 46, table 2-12: The narrative identifies Rocky Mountain National Park as a major attraction for outdoor recreation opportunities, yet the table does not list use of the park. Use was as follows: 181

1978	3,037,866 visitors*
1979	2,579,986
1980	2,654,197
1981	2,917,080
1982	2,578,902

*not comparable to definition of visitor day

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Volume 1, page 48, figure 2-4: Boundary of Rocky Mountain National Park prior to December 22, 1980; Public Law 96-560 revised the boundaries.

Volume 2, Graphics: Minor errors are included on the Rocky Mountain National Park portion of the resource management plan maps. If the base map is corrected, then the park should be contacted for the corrections. The person to contact is Mr. Ed Menning, Rocky Mountain National Park, (303) 586-2371.

Richard A. Strait

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STATE OF COLORADO

Department of Local Affairs

DIVISION OF LOCAL GOVERNMENT

Pat Ratliff, Director

Richard D. Lamm
Governor

MEMORANDUM

TO: BUREAU OF LAND MANAGEMENT
Attn: Harold Belisle, Area Manager

FROM: Stephen O. Ellis
State Clearinghouse

SUBJECT: ADDITIONAL COMMENTS
Kremmling Resource Management Plan

DATE: May 27, 1983

The enclosed comments on the above-referenced proposal have just been received from the following:

Colorado Natural Heritage Inventory

Please consider this transmittal as an official addition to the comments which I sent to you earlier. We regret this late transmittal, and hope that these comments can still be given consideration.

Thank you for your attention.

SE/vt
Enclosure

IR# 213

57

COLORADO NATURAL HERITAGE INVENTORY
1550 Lincoln Street, Room 110 Denver, Colorado 80203 (303) 866-5887

TO: Stephen O. Ellis, State Clearinghouse DATE: 26 MAY 83

FROM: Colorado Natural Heritage Inventory CC: C. Pustmueller

DATA PERTAINING TO: Kremmling Resource Area Management Plan - EIS

PLANT ASSOCIATIONS OF SPECIAL CONCERN

The following "Plant Associations of Special Concern in Colorado" (CNHI - 1 Jan. 1983) are known to occur in the Kremmling Resource Area: 107

1. A1 Rank
   a. Amelanchier utahensis-Symphoricarpos oreophilus/Agropyron spicatum
   b. Oryzopsis hymenoides Shale Barren
2. B1 Rank
   a. Juniperus scopulorum/Agropyron spicatum
   b. Artemisia cana/Festuca thurberi
   c. Agropyron spicatum-Poa fendleriana
3. B2 Rank
   a. Artemisia longiloba/Agropyron spicatum
   b. Artemisia nova/Agropyron spicatum
   c. Artemisia tridentata ssp. wyomingensis-Purshia tridentata/Agropyron spicatum
   d. Artemisia tripartita ssp. rupicola/Festuca idahoensis
   e. Artemisia tridentata ssp. vaseyana/Agropyron spicatum
   f. Artemisia tridentata ssp. vaseyana-Purshia tridentata/Festuca idahoensis

THE NATURE CONSERVANCY [illegible] AND THE COLORADO NATURAL AREAS PROGRAM COLORADO [illegible]

57

Stephen O. Ellis -2- 26 MAY 83
State Clearinghouse

RE: Kremmling Resource Area Management Plant - EIS

These associations are on the list because there are currently no known examples, in good to excellent condition, protected in Research Natural Areas or Areas of Critical Environmental Concern in Colorado and most stands of these associations have been observed to have been significantly altered from their presettlement condition. Special management considerations may be required in order to insure perpetuation of extant remnants.

Additional fieldwork is needed to locate the best remaining examples of these associations. Some of this work is scheduled for 1983. It is likely that this information will be available for the Colorado Natural Areas Program in the Fall of 1983 for their use in working cooperatively with BLM in establishing RNA's and ACEC's for these important vegetation types.

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United States Department of the Interior
FISH AND WILDLIFE SERVICE
AREA OFFICE COLORADO—UTAH
1311 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138-1197

IN REPLY REFER TO

MAY 3 1 1983

MEMORANDUM

To: Bureau of Land Management, Area Manager
Kremmling Resource Area, Kremmling, CO

From: ACTING Field Supervisor, Ecological Services
Salt Lake City, UT

Subject: Review of Resource Management Plan and Environmental Impact Statement for the Kremmling Resource Area

We have reviewed the document, subject as above, and offer the following comments for your use.

General Comments

All of the alternatives with the exception of the no action alternatives call for the disposal of various amounts of public lands. Federal, State and local interest, including the Fish and Wildlife Service, should be consulted prior to disposal of the public lands. Our goal would be to ensure that adverse impacts to fish and wildlife resources or use of these resources by the public is minimized. Disposal criteria for the public land are not listed in the document. We assume that there are criteria, including fish and wildlife values, to divide the lands into retention or disposal categories. Public land disposals could have significant impacts on FWS programs. Currently, this is one of the best alternatives for us to acquire needed lands. Of particular interest to us are wetlands, that now support or could be managed to support waterfowl and migratory birds. A list of lands scheduled for disposal should be included in the mangement plan so we could determine if any are suitable for either the Colorado Division of Wildlife or our use as wildlife management areas. 161 175

All riparian zones should receive special consideration for habitat improvement for fish and wildlife purposes, not merely three miles as called for in the preferred alternative. 98

The sage grouse is dependent on sagebrush during all times of the year. Therefore, any known sage grouse breeding, nesting and wintering areas should be excluded from sagebrush eradication areas to insure that critical habitat to maintain this species is retained. 99

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Bureau of Land Management, Area Manager
Page 2

The DEIS does not specify where or when mitigation measures to --- "acceptably reduce impacts to wildlife habitat" --- will be accomplished. The National Environmental Policy Act (NEPA) requires an EIS to "include appropriate mitigation measures not already included in the proposed action or alternative" (Section 1502.14(f). Section 1502.16(h) requires a discussion of the "means to mitigate adverse environmental impacts". Without inclusion of the means and measures needed to compensate for fish and wildlife losses associated with the proposal, the requirements of NEPA and the CEQ will not be fully met. 100

A major concern which your Bureau must address is possible impacts to Federally listed or proposed threatened or endangered species. It appears that listed endangered and threatened species or species proposed for listing may occur in the area of influence of this action. The following list of species do not all occur in the Resource Management Area. Some such as the eagle and falcon, are winter migrants, others such as the whooping crane and the fish species are found far downstream in the Platte and Colorado River. However, actions taken on the Resource Management Area, such as the water development or mining could indirectly impact species off the area as well as directly impact species in the area. To comply with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies or their designees are required to obtain from the Fish and Wildlife Service (FWS) information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed construction project. Therefore, we are furnishing you the following list of species which may be present in the concerned area: 109

Listed (Endangered)

Bald eagle	Haliaeetus leucocephalus
Colorado squawfish	Ptychocheilus lucius
Humpback chub	Gila cypha
Whooping crane	Grus Americanus
Peregrine falcon	Falco peregrinus
North Park phacelia	Phacelia formosula

While your agency does not have a legal responsibility to protect candidate species, we believe it is the spirit of the endangered species act to also provide protection to these species. Therefore, the following list of candidate species that may be impacted by actions taken on the Resource Management Area is provided for your information. Our primary reason for providing the list to you at this time is so you may develop conservation plans for the protection of these species in the Resource Management Area, if you so desire.

Candidate Species

Razorback sucker	Xyrsuchen texanus
Osterhout's milkvetch	Astragalus osterhoutii
Herrington's penstemon	Penstemon harringtonii
Figwort Family (no common name)	Mimulus gemmiporus

Bureau of Land Management, Area Manager
Page 3

Section 7(c) also requires the Federal agency proposing a major Federal Action significantly affecting the quality of the human environment to conduct and submit to the FWS a biological assessment to determine the effects of the proposal on listed and proposed species. The biological assessment shall be completed within 180 days after the date on which initiated or a time mutually agreed upon between the agency and the FWS. Before physical modification/alteration of a major Federal action is begun the assessment must be completed. If the biological assessment is not begun within 90 days, this list should be verified with us prior to initiation of the assessment. We do not feel that we can adequately assess the affects of the proposed action on listed and proposed species or critical habitat and proposed critical habitat without a complete assessment. When conducting a biological assessment, the following shall be done at a minimum: 108

1. Conduct a scientifically sound on-site inspection of the area affected by the action, which must, unless otherwise directed by the FWS, include a detailed survey of the area to determine if listed or proposed species are present or occur seasonally and whether suitable habitat exists within the area for either expanding the existing population or potential reintroduction of populations;

2. Interview recognized experts on the species at issue, including those within the Fish and Wildlife Service, State Conservation Agencies, Universities, and others who may have data not yet found in scientific literature;

3. Review literature and other scientific data to determine the species' distribution, habitat needs and other biological requirements.

4. Review and analyze the affects of the action on the species, in terms of individuals and populations, including consideration of the cumulative effects of the action and other actions such as the Azure Project.

5. Analyze alternative actions that may provide conservation measures.

6. Conduct any studies necessary to fulfill the requirements of (1) through (5) above.

7. Review any other relevant information.

Your attention also is directed to Section 7(d) of the Endangered Species Act, as amended, which underscores the requirement that the Federal agency or the applicant shall make no irreversible or irretrievable commitment of resources during the implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species.

Requests for assistance on endangered species aspects of this project should be sent to the Field Supervisor, Endangered Species, Fish and Wildlife Service, Department of the Interior, Federal Building, Room 1406, 125 South State Street, Salt Lake City, UT 84138-1197.

Bureau of Land Management, Area Manager
Page 4

Specific Comments

Page 4, fourth paragraph, first sentence. The most common name of Phacelia formosula is the North Park phacelia rather than the scorpion weed.

Page 36, Surface Water Resource. The Williams Fork Reservoir is part of the Denver Water Department's water system. As such it provides replacement storage for water diverted to the East slope by the Denver Water Department, rather than by the Colorado Big Thompson Project. 181

Page 40, Wetlands. The word "riparian" is a commonly used and accepted term, however, its use is avoided in the Fish and Wildlife Service publication, Classification of Wetlands and Deepwater Habitats of the United States, (Cowardin, et al, 1979). We suggest that the wetlands in the resource area be classified according to the Cowardin system. 101

Page 82 - Table 3-2

There appears to be a discrepancy between the acreages indicated and the areas which were found unsuitable during the unsuitability consultation with FWS. Most notably, the acreages shown for eagle and falcon nest sites do not appear to reflect all the areas found unsuitable during field application. Review and/or revision of this table for the FEIS seems appropriate. 110

Page 169-170. There appears to be some confusion as to which alternative will emphasize wildlife habitat and population production. For example, on page 169, it is stated that the preferred alternative --- "emphasizes wildlife habitat and populations production more than any other, with the exception of the Recreation alternatives". However, on page 170, exactly the same statement is made about the Renewable Resources Alternative.

This section of the document could be improved by stating that wildlife habitat would be affected by the various alternative rather than saying wildlife could be affected. For example, on page 169, in the Economic Benefit alternative all the "coulds" should be replaced with "would".

Summary Comments

Winter range for deer and elk as well as year round habitat for sage grouse is continually declining in the State of Colorado due primarily to sagebrush eradication for agricultural, mining and subdivision purposes. The best potential for maintaining critical wildlife habitat is on public land. Therefore, all proposed land disposals in the Resource Management Area should be closely coordinated with our Service and the Colorado Division of Wildlife to determine their value for wildlife purposes.

The draft EIS does not adequately address endangered species and potential impacts to listed and/or proposed species in the Resource Management Area

Bureau of Land Management, Area Manager
Page 5

or species that are found outside of the area but may be affected by actions taken in the area.

The opportunity to comment on the draft at this time is appreciated.

Richard D. Lamm

cc: CDOW, Denver, Grand Junction
FWS/Grand Junction
FWS/LSO, Golden
FWS/SE, Salt Lake City, Grand Junction

STATE OF COLORADO
Department of Local Affairs

DIVISION OF LOCAL GOVERNMENT
Pat Rahill, Director

Richard D. Lamm
Governor

MEMORANDUM

TO: BUREAU OF LAND MANAGEMENT
Attn: Harold Belisle, Area Manager

FROM: Stephen O. Ellis
State Clearinghouse

SUBJECT: ADDITIONAL COMMENTS
Kremmling Resource Management Plan

DATE: June 1, 1983

The enclosed comments on the above-referenced proposal have just been received from the following:

Colorado Division of Water Resources

Please consider this transmittal as an official addition to the comments which I sent to you earlier. We regret this late transmittal, and hope that these comments can still be given consideration.

Thank you for your attention.

SE/vt
Enclosure

59

RICHARD D. LAMM
Governor

497

JERIS A. DANIELSON
State Engineer

OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES

1313 Sherman Street-Room 818
Denver, Colorado 80203
(303) 866-3581

May 23, 1983

MEMORANDUM

TO: Dewitt John, Department of Natural Resources

FROM: Hal D. Simpson, Assistant State Engineer

SUBJECT: Kremmling Resource Area Draft Management Plan Environmental Impact Statement (EIS)

RECEIVED JUN 1 1983 Division of Local Government

As requested, we have reviewed the above referenced Management Plan/Environmental Impact Statement. We believe, in general, the EIS adequately addresses the issues which concern our office. We would, however, like to make the following general comments:

1. We agree with the EIS statement that snowpack from the region provides a major water source for domestic, municipal, industrial, and agricultural water use. As energy development and other development continues, competition for the limited available water supply will increase. For this reason, it is important that management practices do not measurably reduce the runoff from this region. We do support steps which will improve the quality of water in the area.

2. The management plan must be administered in compliance with Colorado Water Law regarding water use. We realize that certain issues remain to be resolved concerning the reserved rights doctrine, including quantification of claims.

3. We believe compliance with "applicable Colorado Water Laws" should be added to the list of committed mitigation measures on page 165 of the EIS. 53

4. No storage reservoirs may be constructed over 10 feet high in Colorado without our office's approval of the plans. Livestock watering reservoirs must be approved by our office if their embankments are over five feet in height.

HDS/JRH:ma

RECEIVED MAY 24 1983

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BOARD OF COUNTY COMMISSIONERS

ANTHONY D. MARTIN — ROBERT L. CARLSTROM — ROBERT E. MANVILLE

COUNTY OF JACKSON

WALDEN, COLORADO 80480

May 25, 1983

Bureau of Land Management
Kremmling Resource Area Office
P.O. Box 68; 1116 Park Ave.
Kremmling, Colorado 80459

RE: RESOURCE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT FOR THE KREMMLING RESOURCE AREA COLORADO

Gentlemen:

The Board of County Commissioners of Jackson County, Colorado, has reviewed the Draft Resource Management Plan/Environmental Impact Statement for the Kremmling Resource Area Colorado, and commends the preparers on a tough job well done.

It is this Board's opinion that the Preferrred Alternative as set forth in the Draft Resource Management Plan is a very reasonable and workable multiple use plan which very clearly addresses the needs of the various users of the public lands administered by the Bureau of Land Management. The management direction set forth by the Preferred Alternative provides more than adequate protection and enhancement of the natural environment of the Resource area. It provides protection and management flexibility for all public lands resources, and also makes reasonable provision for the maintenance of high air and water quality in the Resource area.

Although this Board supports the Preferred Alternative, there is one area in the North Park basin where this Board questions the appropriateness *of the priority use area designations. This Board is of the opinion that* additional lands along and adjacent to the structural crests of the North and South McCullum anticlines should be designated as oil and gas priority use, especially in those areas where there is established and proven production and development. Additionally, it would appear that oil and gas priority use designation would be more appropriate for those lands overlying steeply dipping anticlinal and synclinal structural flanks where very high overburden ratios would preclude economical coal extraction in the immediate future or where major coal seams are not present because of erosion. 45

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Bureau of Land Management
May 25, 1983
Page 2

Except for those questions related to the oil and gas priority designations described above, it is this Board's opinion that the Preferred Alternative provides the proper management direction to ensure the wise utilization and continued production of all public land resources to the benefit and *enhancement of local and regional economies and needs, while at the same* time, protecting and preserving the valuable natural environment of the area.

BOARD OF COUNTY COMMISSIONERS
JACKSON COUNTY, COLORADO

By: Robert L. Carlstrom
Robert L. Carlstrom, Chairman

BCC/skb

xc: file copy

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295

Ref: 8PM-EA

MAY 25 1983

George C. Francis
State Director
BLM, Colorado State Office
1037 20th Street
Denver, Colorado 80202

Dear Mr. Francis:

The Region VIII Office of the Environmental Protection Agency has completed its review of the draft Resource Management Plan/Environmental Impact Statement for the Kremmling Resource Area, Craig District, Colorado. The draft EIS is generally well written and comprehensive.

One of our primary areas of concern in reviewing land management proposals is water quality maintenance and enhancement.

The Kremmling Resource Area forms the headwaters of the North Platte and Colorado Rivers, both of which are important municipal and agricultural sources of water supply. For this reason, we support the Natural Environmental Alternative over the preferred alternative. The Natural Environmental Alternative appears to offer the most active program for maintaining and improving water resources in the planning area. The incorporation of the Troublesome WSA into the Wilderness system would provide better water quality protection for that area (and its five perennial streams) than the timbering suggested in the preferred alternative. The two percent reduction in ORV use, especially in sensitive areas such as the North Sand Hills, would lead to reduced sediment loads. Fewer surface disturbing actions in general (mining, timbering, etc.) plus the protection of sensitive areas, would reduce sedimentation problems. Although the Muddy Creek drainage and several springs are identified as significant salinity point sources (page 37) none of the alternatives specifically propose site specific solutions to their problems. Such solutions should be included in the final EIS. 54

According to the system EPA uses to rate draft EIS's, the EIS for the Kremmling Resource area will be listed in the Federal Register as LO-2. This means that we have no objections to the project as proposed. However, we believe the Natural Environment Alternative preferable and recommend its adoption or at least incorporating more of its water quality benefits into the preferred alternative. If you have any questions regarding our comments please contact Dennis Sohocki at FTS 327-4831.

Sincerely yours,

Steven J. Durham
Regional Administrator

83 JUN 13 AM 10:41

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Department Of Energy
Western Area Power Administration
P.O. Box 11606
Salt Lake City, Utah 84147

Jul 1 1983

In Reply
Refer To: L2130

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1983 JUN 20 AM 9 29

Harold Belisle, Area Manager
Bureau of Land Management
Kremmling Resource Area
P.O. Box 68
Kremmling, CO 80459

Dear Mr. Belisle:

We have reviewed the Kremmling Resource Area Management Plan/Draft Environmental Impact Statement (DEIS) and offer comments on the identification and development of major linear rights-of-way for your resource management plan. The Salt Lake City Area Office, Western Area Power Administration, owns and operates transmission lines within the Kremmling Resource Area and currently is a participant in the Hayden-Blue River 230/345 kV Transmission Line Project. Our general and specific comments on the management plan follow.

General Comments

We support the establishment of transmission line placement criteria as presented in the EIS. However, it is unclear if the placements of rights-of-way will be defined and integrated into the plan or whether the placements will be considered on a case-by-case basis as specific needs arise. We believe the placements should be considered on a case-by-case basis and that the criteria for the placement of transmission lines should not be limited but expanded to include all the criteria addressed in the draft management plan so that the best placement of transmission line rights-of-way, both economically and environmentally, may be achieved. The criteria should allow for flexibility and not restrict the location by requiring avoidance of some noncritical areas. The criteria should allow for the comparison of different parameters so they may be weighed and properly considered by affected decision makers. 163

The draft management plan does not discuss plans for existing facilities or how other legal requirements such as the National Environmental Policy Act will be considered for placing future linear rights-of-way.

Specific Comments

Page 111 states that most existing rights-of-way have long-term impacts on other resources and large powerlines present long-term visual intrusions on the landscape. However, on page 45, it implies that even with the presence

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of 345 kV lines traversing North Park, which can be seen from major traffic routes, the visitor still can see the countryside, get a feeling of remoteness and enjoy the mountain vistas. Therefore, we sense two different management philosophies about visual intrusions of powerlines in the EIS. It would seem to us that the visibility of transmission facilities should not be used as sole justification for either mitigation or exclusion of these facilities or the sole basis for present and future management decisions. In most cases, the presence of powerlines allows the continued use of land and wildlife resources.

Page 111 also references the Western Regional Corridor Study Group. It is unclear how the plan will utilize the probable utility corridors in locating future transmission lines.

Page 118 discusses the criteria upon which transmission line locations would be dependent. As discussed above, we believe the location of facilities should not be absolutely dependent upon certain criteria but rather that the criteria should used to guide and aid decision-makers in locating future transmission lines. For instance, concentrating linear facilities within or contiguous to existing corridors may not be feasible for engineering or operation reasons. Steep topography may not necessarily be fragile to transmission line construction depending on existing access and construction methods employed. Livestock and wildlife harassment can be avoided by construction scheduling. 163

Page 172 under Visual Resources refers the reader to chapter 2 for a description of the class II visual area. A description of the classes was not found in chapter 2. 181

We appreciate the opportunity to review the draft. If you desire additional information or clarification of our concerns we will be happy to respond accordingly. We would appreciate a copy of the final environmental impact statement upon completion.

Sincerely,

Lloyd D. Nelson
for A. M. Gabiola
Area Manager

PUBLIC HEARING RECORD

Kremmling Resource
Management Plan

April 12, 1983
7:00 p.m.
Grand County Courthouse
Hot Sulphur Springs, Colorado

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Colorado State Office
Craig District
Kremmling Resource Area

* * * * *

ORIGINAL

Additional copies of the draft Environmental Impact Statement and map addendum are available at the rear of the room if you need copies.

HEARING OFFICER: I'd like to let the record show that there are no speakers indicated on the list from elected officials.

Our first speaker this evening is Mark Pearson.

Would you please step forward?

MR. PEARSON: Hello. My name is Mark Pearson.

I am the Western Slope staff for the Colorado Open Space Council. I live in Grand Junction, Colorado.

The Colorado Open Space Council is Colorado's statewide conservation coalition, with 1,200 individual members and approximately 40 member groups representing 30,000 people.

We feel the Kremmling RMP is a better effort than that of the Glenwood Springs Resource Area, and that the document is clear and succinct, the maps are easily read, the alternatives considered in the EIS cover a wide range of viewpoints, the information contained within the EIS is thorough both in depth and in presentation.

However, the Colorado Open Space Council does not agree with the Preferred Alternative of the EIS. We prefer the Natural Environment Alternative for a number of reasons.

First, the Natural Environment Alternative

identifies 13,000 acres for coal suitability, while the Preferred Alternative identifies three times that amount, 45,000 acres. The Natural Environment Alternative also satisfies the anticipated continuing moderate increase in demand for coal in the region, as the EIS states on Page 158.

We do not understand the rush to commit lands to a coal priority use. This RMP is due for revision within a period of ten years, according to BLM regulations. At that time the need for expanded supplies for coal can be reassessed. If additional supplies are required, then that is the proper time to expand the lands indentified as coal priority use areas. Until that time, let's not foreclose alternate future options for renewable resource uses as opposed to some non-renewable coal resources.

Secondly, the Colorado Open Space Council supports the Natural Environment Alternative in that it is the only alternative recommending Troublesome WSA as suitable for wilderness. As described in the EIS, Troublesome has the requisite mandatory characteristics for wilderness, including outstanding opportunities for recreation and for solitude.

Additionally, Troublesome is the closest BLM WSA to the Denver metro area, an area experiencing phenomenal growth both in population and in demand for outdoor recreation in a wilderness setting.

The Kremmling Resource Area should follow the example

of Routt National Forest in its recent wilderness recommendation for Vasquez Peak WSA. Vasquez Peak was recommended on the basis of the desire to meet the ever-increasing wilderness demands of the one and a half million residents of the Denver metro area.

Also, the proximity of Troublesome WSA to other designated wilderness is unfairly counted against it, for example on Page 117. Nowhere in the plan are similar arguments used against identification of coal priority areas simply because of proximity to existing coal development areas. Arguments of this type should be used for all resources, or for none. Wilderness resources should not be singled out as special cases.

Third, the Natural Environment Alternative takes a strong stand in favor of the present recreational use of the Colorado River through Gore Canyon and opposes Azure Dam on the basis of incompatibility with existing use. Recreational use constitutes the most beneficial use, both economically and environmentally, of the Upper Colorado River.

Existing users should not be displaced in favor of future uses of undetermined desirability. COSC urges BLM to take a strong stand against the Azure Dam as currently proposed. Rather, the extremely popular and economically important current recreational uses of the river should be continued.

Fourth, the Natural Environment Alternative is identical to the Preferred Alternative in terms of timber production.

Fifth, the Natural Environment Alternative produces more forage for both livestock and wildlife, as the comparison of alternatives shows in Table 3-27.

Sixth, Colorado Open Space Council opposes the indiscriminate liquidation of publicly owned lands. Exchange options should be pursued in all cases before outright sale. The recent extensive controversy arising from the Forest Service's land sale study proposals makes the public opposition to widespread land sales crystal clear. The Natural Environment Alternative identifies the least amount of lands for sale and is thus preferred for this reason.

I have several additional questions and comments concerning the EIS as it's written:

First, since absolutely no mention is made in the EIS of any acres anywhere in the Resource Area which are proposed for vegetative manipulation in order to increase water yield, it is assumed that no such efforts will occur. Please correct me if this assumption is in error. 69

Secondly, present BLM regulations state that, quote, ". . .the resource management plan establishes in a written document intervals and standards for evaluating the plan to determine the effectiveness of the plan. . ." That's 6

43 CFR 1601.0-5(m)(8).

I could find nowhere in this plan any intervals or standards for evaluation. Blm may be intending to add those for the final EIS. However, that gives the public no opportunity for comment on the adequacy of those intervals and standards. 6

BLM regulations further note that the Resource Management Plan is to be revised at least every ten years. That's 43 CFR 1601.6-3(c).

Nowhere in the document is this fact mentioned. This EIS gives the impression that this RMP is the final word for management of the Resource Area forever.

Also, I would appreciate clarification as to the difference, if any, between the terms "Research Natural Area" and "Area of Critical Environmental Concern". There is interchangeable use of the terms in the EIS. I was wondering if that's intentional. 106 111 181

For example, on Page 116, the Preferred Alternative identifies the North Park phacelia site as being an ACEC. And then on Page 169 the Preferred Alternative identifies that same North Park phacelia site as a Research Natural Area.

Are you meaning the designations to be overlapping? And, if so, that should be clarified.

An ACEC designation may not necessarily bring with it specific management restrictions, but formal designation as

a Research Natural Area under agreement with the State Natural Areas Program might entail management restrictions.

So, since there might be a difference, you should be consistent in that instance.

Thank you for the opportunity to comment.

We appreciate the careful consideration of our concerns.

HEARING OFFICER: Does the Panel have any questions?

(The Panel indicated there were no questions.)

HEARING OFFICER: Thank you.

The next speaker I'll call is Doug Freeman. Please state your name, your address, and the organization you represent.

MR. FREEMAN: My name is Doug Freeman. I am with Timber Rafting. I speak to you tonight as a representative of CROA, Colorado River Outfitters Association, as well as for my own company, Timber Rafting, as well as for myself.

First off, I'd like to compliment the Bureau of Land Management office at Kremmling for the superior operations that they have at that location. We deal, as outfitters, through lots of other BLM offices in the state, and I don't think that there's any office that I have come across that operates as efficiently, as effectively as the BLM office does in Kremmling.

I would like to urge the preparers of the statement to consider the recreational value of the river rafting industry through the Gore Canyon. I urge them to realize the value of that traffic and the economic impact that it has to Grand County and to Routt County and to Summit County and to Eagle County.

And I have some suggestions which I would like to comment on, in terms of the operations as they stand now, and some suggestions about what could be done to make some corrections, by BLM in the future.

I would like to express that the River Management Plan that has come out -- I guess it was last spring -- showing continued adding of access sites and facilities along the river is exceptional. It has the support of CROA, as well as for myself, and I think it will enable us to operate more efficiently, without having to burden private landowners along the river, and I urge BLM to continue efforts to provide more access points and facilities for both commercial and private river outfitters.

I also urge that the BLM in the future conduct a more thorough application process for the selection of commercial river outfitters to operate on the Colorado River. At this point in time, almost anyone can apply and receive a commercial river outfitters license to operate through the Gore Canyon, or through any other stretch of BLM regulated

rivers in the state. I do not think that is enough. It does not keep out rogue outfitters -- however you want to call it -- it does not really provide enough policing of the rivers, from a safety standpoint, or from an environmental impact standpoint. I think we need more support from the BLM in terms of this application process and in terms of follow-up through policing, again, to protect the environment and the rights of the private landowners along the river.

I would also like to express my concern about the lack of opinion, stated opinion, at least, from the BLM regarding the Azure Dam Project. Again, I go back to my first comment where I urge that they realize the recreational and economic impact of the Gore Canyon, from a rafting standpoint, as well as to BLM's cash standpoint. It does provide income for the counties as a whole, as well as to BLM.

I would like to see the BLM come out with a strong statement against the Azure Project and against the impact it will have economically on all four counties that are involved with that dam.

And I would also urge the BLM to express an opinion as far as the Northern Colorado Water Conservacy District, taking a look at alternative sites for a reservoir, in particular, the Woolford (phon.) Mountain site.

We, as outfitters, feel that there are definitely other sites available to build reservoirs to meet the

commitment necessary for the Western Slope. We do not feel that it needs to be in Gore Canyon. And I would like to see the BLM come out with a statement to that effect.

I'm also concerned about the proposed fee increase that may go into effect next year for recreational use of BLM lands, and the fact that it is to be -- it is not going to stay local; it's going to be sent back to Washington and will not be used for recreational purposes here -- The fact that we're having to pay "so much" dollars per passenger day and have it shipped back to Washington to be put into the general fund, when the Blm office here at Kremmling does not have enough money right now to effectively operate the river management or any other area.

That is all I have.

MR. BAKER: I would just like to clarify for the record, when you're talking about "Gore Canyon", you're actually talking about Little Gore Canyon. Is that --

MR. FREEMAN: Yes.

MR. BAKER: -- right? Thank you.

HEARING OFFICER: Thank you.

MR. FREEMAN: You bet.

HEARING OFFICER: The next speaker on the list is Jeff Brown.

MR. BROWN: My name is Jeff Brown. I live in Fraser, Colorado. I'm here representing myself. I'm also representing

myself as a pleasure rafter on the Colorado River, fisherman and hunter in that area. I am also representing myself partially as a commercial rafter, as I work for some outfitters in the area, and I would say that I speak for the resort industry in the Winter Park region, because I am employed -- am an employee of that region of the county; that's where I make my living.

I would like to say that the draft DIS (sic) that you've put together looks very well done. I've never seen a document so easy to read that has come from a group, either the Forest Service or BLM, and I appreciate your efforts that you put into this draft DIS(sic).

I, personally, would like to see you support the Natural Environment Alternative for several reasons, one being that it does support designating the Troublesome Area as a wilderness area.

I spend a lot of time in the high country here in this county. I see the over-use in places like up in the Indian Peaks Wilderness Area, on our side of it, and then Columbine Lake. I see the impact, because there's too many people camping up there; and I see the impact up at St. Louis Lake and in the Fraser Experimental Forest -- there's too many people backpacking up there.

I think it's obvious that we need more wilderness areas, and I think the Troublesome area would greatly enhance

the whole wilderness system in this area.

We're too close to the Front Range to give up any more land that has any potentiality for wilderness area, the Troublesome area being an excellent place to designate it.

Second, I would like to see the BLM come out in a strong statement opposing the Azure Dam Project for several reasons: economic, environmental, recreational. I think that the public mandate exists in this county that would support you if you came out in a strong statement against the Azure Dam.

There are alternatives; Woolford (phon.) is very viable. And the recreation aspects of whitewater rafting, float boating, fishing in that canyon would be critically damaged if the Azure Dam project were completed. The environmental and ecological gains -- or ecological losses wouldn't be worth what we would gain from the Azure Dam Project.

I also prefer the Natrual Environment Alternative because it does de-emphasize the coal development up near Walden, as Mark pointed out. It could be that in ten years that might be the time to look at that alternative and increase the development in that particular area.

That's all I have to say. Thank you.

HEARING OFFICER: Any questions?

(The Panel indicated there were no questions.)

HEARING OFFICER: Thank you.

The next speaker is Mike Leroux.

MR. LEROUX: I'm Mike Leroux. I'm an area rancher, and a guide and outfitter for wildlife. And I also happen to be President of the Eagle County Soil Conservation District.

Looking through your plan, I kind of feel your Preferred Alternate -- Alternative is excellent. Your trying to use multiple-use programs is what I think is what you need to do, and you cover it rather well.

I found a couple of small problems I have with it, and first of all is with wildlife. Here we are cutting livestock grazing, and I feel a good portion of the reason we have to cut grazing is due to the fact wildlife is using more and more all the time. You base your continued usage in your alternative plan on 1980 numbers.

These numbers are greatly increased from the past ten, twenty years, at least in my area, by a great deal. And I feel that perhaps, if you're going to have wildlife using that much of the grazing privileges and stuff, that they should be paying for it, if there's some way to find it. Otherwise, I feel you should de-emphasize wildlife and work with the private individuals paying money directly to you.

In regard to recreation, there is -- mainly in the area of Gore Canyon, down there -- there are some major conflicts that have come about in regard to the rafting

industry, which is fairly new. Before you intensify management in any way in that area, I feel you should review. And I feel that people would like to see an impact statement of the industry and the area before it is increased.

Some of the things I feel you should view are the access roads to the area, how funding can be supplied to maintain and improve them, because at this time everyone feels they are dangerous with the increased traffic. Secondly, review the effect that it has on the private landowners in the area; what's it costing them, how many more burdens are they having to carry? How much more burden is being placed on the law enforcement agencies in the area with this many people in the area? And what is the effect on fishing; what is the effect on wildlife, such as waterfowl, in the area?

You look at these things and decide, and I think you'll find that there are negative aspects as well as positive aspects.

I don't feel I'm qualified to say exactly where the middle ground is, but I think that you're going to have to have some control, because numbers have been getting completely out of hand in the past three or four years. Previously, it was not bad.

I think that the outfitters are trying to work together to improve the area, but BLM is going to have to

work with them, and I think it's going to be a licensing and numbers-restricted deal to maintain it.

Also, I think you should look at the direct relationship of income to the immediate area, such as the Kremmling area, and the tax base that is down there to maintain the roads, et cetera, before you add more burden to the area.

And going on from this, you can then review the Azure Project, how you feel it relates to recreation and benefits to the Western Slope, to Grand County in particular, what that Azure Project can bring to us. And at that time I think you can make a knowledgeable decision.

But I think an -- impact statement in regard to recreation and rafters in the area is not important.

I guess that's all I have. Thank you.

HEARING OFFICER: Questions?

(The Panel indicated there were no questions.

HEARING OFFICER: Thank you.

Those are all the names I have on the list of speakers. Is there anyone else who wishes to speak?

(No one came forward.

HEARING OFFICER: The hearing record will remain open until May 25th, 1983, and written comments may be addressed to the Kremmling Resource Area Office, Post Office

PUBLIC HEARING RECORD

Kremmling Resource
Management Plan

April 13, 1983
7:00 p.m.
SCS Building
Walden, Colorado

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Colorado State Office
Craig District
Kremmling Resource Area

* * * * *

ORIGINAL

wilderness Environmental Impact Statement will be prepared in addition to the final impact statement on the overall plan.

Testimony received at today's hearing and written input received throughout this public review period will be incorporated into the wilderness study report and preliminary final wilderness Environmental Impact Statement. This public input will be considered by all reviewing entities as the wilderness recommendations make their way to Congress.

Additional copies of the Environmental Impact Statement and map addendum are available at the rear of the room if you need copies.

HEARING OFFICER: Thanks, Ade.

Are there any elected officials in the audience that wish to make a statement?

(Pause)

Let the record show there are none.

The only individual who has signed up who wishes to make a statement is -- Dave Meyring?

MR. HOLSINGER: I'm sorry, I didn't notice that, and I --

HEARING OFFICER: Well, okay --

MR. HOLSINGER: -- have a few things I'd like to say.

HEARING OFFICER: -- okay. We'll start with Dave and then follow with you.

If you'd like to step up over here and use this (indicating podium set-up), please state your name and address, and if you represent anyone, who it is.

MR. MEYRING. My name is Dave Meyring. I live about 20 miles southwest of Walden. I'm representing Arapaho Livestock Company, of which I'm a director.

And the reason I wanted to make a comment is, we have a proposal for a reservoir, and it would be partially on BLM lands. And I thought that the planners should be aware of this, because I hadn't notified them earlier, and I thought perhaps that I should enter that at this time.

The dam for this reservoir would be located in the South half of the Northeast quarter of Section 32, Township 7, Range 80 West of the 6th p.m. Lands covered by the reservoir, if it would be built as we're proposing, would cover lands in Section 32 of Township 7 Range 80 West of the 6th principal meridian, and also lands in Section 5, 6, 7 and 8 in Township 6 Range 80 West.

The dam would be approximately 43 feet high; the reservoir would hold approximately 12,580 acre feet, and would cover at the high-water line approximately 670 acres, more or less. This high-water line would be approximately the 8,200-foot contour, which is found on Acoma-Spicer Peak, 7-1/2 minute series topographic map.

The lands now are, if I understand it correctly,

designated as primary use for coal leasing.

Again, my purpose is that I would like to have you aware of what we're planning, and perhaps this input would be important in your further planning process.

I have a written statement that I guess I would like to give to the BLM people. I have talked to them previously at their office, but I did want to enter this one. In this statement, there is also a copy of the ruling of the Referee on a conditional water right for this reservoir in Division 6 of the State Engineer's Office.

HEARING OFFICER: Does the Panel have any questions?

(The Panel indicated there were no questions.)

HEARING OFFICER: Thank you.

Okay. Next speaker. Please state your name, if you would.

MR. HOLSINGER: Keith Holsinger.

I'd just like to go on record as being opposed to being put in -- I think it was Category C -- is that right, David?

MR. HARR: Three.

MR. HOLSINGER: -- Category 3; okay -- which is a coal -- an expected coal area. And, you know, I've been -- discussed all this with Dave and he's explained it to me, but I still want to go on record as being opposed to it, because

I don't -- I don't think -- personally, I don't feel I need to take a back seat to the coal area, you know. Not that I have anything against coal miners or coal mines, because they're all good people and they're good friends, and everything.

But my family has had this BLM lease for probably as long as it's been in effect. And I -- you know, we need development out there now, we need water, we need fencing there. The way it's been explained to me is that we can't have any of that until this land is put up for lease and not picked up by someone. Is that right?

MR. BELISLE: That's not entirely correct. We're making it available, and depending on whether or not there is any interest in it, that may be correct.

MR. HOLSINGER: Yeah, but that it -- that is true, isn't it, that there won't be any money for water development or fencing or anything for anyone in a Class 3. Is that right?

HEARING OFFICER: Keith, what I'd like to do is just have you go ahead and make a statement, and the --

MR. HOLSINGER: Okay --

HEARING OFFICER: -- formal response --

MR. HOLSINGER: -- all right --

HEARING OFFICER: -- to that will come out as a --

MR. HOLSINGER: -- all right.

HEARING OFFICER: -- part of the DFIS --

MR. HOLSINGER: Well, I know I'm a part of Class 3; is that right? Okay; I know --

HEARING OFFICER: We can --

MR. HOLSINGER: -- I'm in Class 3, and I want to oppose it.

HEARING OFFICER: -- we can discuss it further after the hearing.

MR. HOLSINGER: All right. I would also like to say, and I'm sure Dave knows this -- I don't know whether you two fellows do or not. You know, it isn't that I -- I'm not worried about being cut back on cattle. If that's the case, fine; so be it. I'll do it.

But don't just, you know -- I don't -- I think the way you're doing it is wrong. Because I'm willing to cooperate by cutting back on the cattle, or change the time period, or non-use, or whatever it takes that way. But don't just take everything. That's the way I see it the way it is.

Okay.

HEARING OFFICER: Okay; thank you.

Are there any questions?

(The Panel indicated there were no questions.)

HEARING OFFICER: I have no other names on the list. Is there anyone else that would like to make a statement this

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

PUBLIC HEARING

KREMMLING RESOURCE MANAGEMENT PLAN

VOLUME I

WEDNESDAY, APRIL 14, 1983

Windsor Room
Holiday Inn West
14707 West Colfax Avenue
Golden, Colorado

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state the name of the organization you represent.

First, I'd like to ask if there are any elected officials present who wish to speak and are not signed up on the speakers' list.

(No response.)

MR. YOUNG: For the record, Becky, there are no elected public officials that wish to speak.

I'll call the speakers in the order they have signed up. Our first speaker is Thomas Florea.

MR. THOMAS J. FLOREA: My name is Thomas J. Florea, 2607 South Jersey, Denver, Colorado 80222.

I'd like to speak in regard to Ptarmigan Small Tracts Area. I would like to, in the list of realty actions and so forth, make three different comments in regard to what should be applied or possibly what could be applied to the Ptarmigan Small Tracts. As I understand, they are surplus to the needs of the federal government.

In disposing of these tracts, one, the tracts should be large enough to support a well or septic tank system and meet the requirements of some accounting; two, verify that easements for roads are defined in the notice of realty action; three, how to acquire these lots, one of them by competitive bidding process, which has already been indicated in the laws, two, possibly an alternative method of disposal method of surplus land, that is, BLM appraisal of

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tracts being sold on a first-come, first-served basis, and three, the availability to the public so that the best interest of the majority of the public can be realized.

That's all I have.

MR. YOUNG: Thank you.

Are there any questions?

(No verbal response.)

MR. YOUNG: Our next speaker will be H. K. Schmuck.

MR. HOWARD K. SCHMUCK: My name is Howard K. Schmuck, Jr., 6045 Johnson Way, Arvada, Colorado 80004.

I have owned property in Section 26, Township 2 North, Range 77 West for 36 years. The preferred alternative gives a potential of 16,897 acres of BLM land suitable for disposal. The map given out with the draft EIS does not identify the location of these lands. The draft EIS does not give any information as to how much of the 16,897 acres is suitable for sale under the various criteria, such as tracts to enhance the tourism economy of Grand Lake, Granby, and Fraser, inholding on the federal lands, and so forth. Hence, the draft EIS is incomplete.

There is a map available here in this room which gives the size and location of the 16,897 acres potentially suitable for disposal. Interested parties, such as myself, should be furnished with this map in sufficient time before the

comment period is ended. I plan to enter supplemental written comment upon receipt of a map showing the location of these lands suitable for disposal.

Thank you.

MR. YOUNG: Thank you.

Are there any questions from the panel?

(No verbal response.)

MR. YOUNG: Our next speaker is Gregg Scott.

MR. GREGG SCOTT: My name is Gregg Scott, 1090-30th Street, Boulder, Colorado.

I grew up in New York City, and it seems to me to be a shame that economic and political pressures are turning what's left of America's treasured parks and wilderness into another industrial area at a rapid rate.

My main reason for escaping from New York to Colorado was to enjoy these pristine areas. I hope that in 30 years I don't turn around and find myself in another New York.

First, I'd like to commend the BLM for a plan and EIS that has far more reasonable range of uses than others I have seen. The plan recognizes the importance of area recreation, although not to the extent I'd like to see.

The proposal to increase the land area to be studied for coal leasing by about ten times seems rather excessive. This would undoubtedly destroy the area wildlife

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and be hazardous to the area's ground water. I would also like to see no surface occupancy stipulations as far as oil and gas leasing goes.

In general, the area's potential for mineral development seems low and further development is probably unnecessary and uneconomic.

I also suggest that grazing be held to a minimum, since this, again, is economically unsound. I do support the proposal for pasture and riparian fencing and limited amounts of vegetarian manipulation.

Since the BLM recognizes the importance of outdoor recreation to the area economy, I fail to see why the Troublesome area did not receive wilderness recommendation. The two chief complaints against this area are its private inholdings and lack of special values. May I suggest that the fact that the area is roadless and pristine is special enough to place it in the wilderness category.

The economic opportunities in the Troublesome area are small, but the recreational, scenic, wildlife, and other intangible values that would be protected would be substantial.

Wilderness should be thought of as a scarce and special resource and should be treated just like other scarce resources, if not given preferential treatment over them. So little wilderness is left, we need to save as much as possible.

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Thank you.

MR. YOUNG: Thank you.

Our next speaker will be Peter Gauss.

MR. PETER GAUSS: Peter Gauss, 1125 Main Street, Louisville, Colorado.

I didn't exactly know how I should prepare for this meeting, so I'd ask your indulgence for a few moments.

First off, the last speaker mentioned the tenfold increase in the coal leasing, and it seems to me like that is a little excessive, especially since only three of the leases that are now there are being used, according to the statements in the book.

Also, the economic conditions seem to be less than ideal for development for such a large development. Also, it's approximately 10 percent of the BLM resource area is under study for this leasing, and yet the wilderness area, which is somewhat more than 10 percent of the area that's going to be leased, hasn't been given, I think, the suitable consideration for wilderness designation.

Also, there are some comments that are made about the North Sand Hills area. In a few places it's mentioned that there is increasing off-road vehicle use in areas that are of cultural and geological importance. I think that changing that designation from an area of critical environmental concern to a special recreation management area

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might increase the damages that result from that type of vehicle use.

Finally, I just wanted to mention that I didn't understand on the grazing alternatives -- all the alternatives seem to mention that there would be a decrease from 45,000 AUMs, animal unit months, to 39,000, and yet on Table 224 on Page 63, it's mentioned that, actually, only 30,000 AUMs have been given to the grazers in the area in the past, so it seems to me that actually there will be no decrease in animal unit months, according to the preferred alternative.

That's all. Thank you very much.

MR. YOUNG: Thank you.

Would the panel like to comment on that, or would it be best to discuss that afterward?

MR. BELISLE: We'd be happy to discuss with you after this meeting the way grazing is allocated and what actually happens -- what we allocate as compared to what's actually used. We could go into that after the meeting.

MR. GAUSS: Okay.

MR. YOUNG: Thank you.

Our next speaker is Al Wahl.

MR. AL WAHL: My name is Al Wahl, 4505 Eldridge Street, Golden 80401. I'm representing a small group of people call themselves Troublesome RARE III. None of these

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people have any financial interest in hunting or fishing or any other recreational activity. Only financial interest we have is what it costs to buy outdoor gear.

About the Resource Management Plan and EIS, we found it a most interest document, and we feel it should be required reading for everybody in Grand and Jackson Counties. We hope it finds its way into all the public libraries and school libraries. That doesn't necessarily say that we think it's infallible in all respects.

I'd like to say something about the maps. The color codes at the top are much too small. They have a black border around them, and that tends to diffuse the color in the square. There's plenty room on the map, they should have been many times that big. You get to using three shades of green and a blue-green and it's pretty easy to get them confused.

I'd like to have seen these maps with the state land shown on them. You do have a map known as the Surface Mineral Management Quads which does show the state land, where it's in connection to the public domain.

Then we would also like to have seen a map indicating which of these roads are public roads. As I understand, that's going to be coming out, but I don't think it's been prepared yet. In other words, we have no way of knowing what lands are accessible by road and what roads are

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private roads and temporary roads or roads that can be done away with. I think they could give a better analysis of that information.

Now, about the alternatives. I'll talk first about the present management plan. I guess we don't understand it, because we find it hard to believe that so little of the public domain is being managed. The map indicates four small areas for grazing and two areas for recreation, four small areas for wildlife habitat, and the coal and the oil, and some area for harvesting of commercial products, and one area of that is Troublesome WSA, which we were led to believe is being managed for potential wilderness.

I say again, we just don't understand what that map is trying to tell us. We intend to write comments and maybe before that time some of this will be clarified.

Then that leads to another question. If the extent of the public domain as presently being managed is so small because of budget restrictions, then we'd like to ask what will be the budget requirements to effect proper management when you have these other areas that cover 50 or 80 percent of public lands?

So at this point, if we have to come down on the side of one of these presented plans, it would have to be the natural environment alternative. We suspect that none of these alternatives presented will be the final one accepted.

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I'd like to say a little about the Troublesome WSA. On Pages 50, 51, and 52 in the document, we find a glowing account of the Troublesome WSA. It seems surprising how easy it is to downgrade this area to an insignificant status not worthy of further consideration as wilderness or de facto wilderness.

Under the economic benefit alternative, this WSA is devoted to harvesting forest products, and given the topography and inaccessability of this area, we cannot see an economic benefit. If the BLM can economically harvest timber in areas like this, then the Forest Service should turn over their timber harvest activities to BLM. The Forest Service logging operations are, in this Rocky Mountain region, an economic liability of significant proportions.

Then I think another thing we tend to assume that areas like this WSA and others haven't any value unless they're used. But I submit that this area has and will continue to provide man with forage for his cattle, water for his crops, unpolluted air, game for his hunting, solitude and beauty for his recreation, as well as many things of botanical, scientific, zoological and geologic interest for his education and enlightenment. We believe it will continue to do this throughout the future, if we can just keep man's vehicles out of it.

Thank you.

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

PUBLIC HEARING

KREMMLING RESOURCE MANAGEMENT PLAN

VOLUME II

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speak who have not signed the speaker's list?

(No response.)

MR. YOUNG: Seeing none, we'll proceed with the speakers signed up on the list in the order that they have signed up. If you represent an organization, will you please state the name of the organization after you state your name and address.

Our first speaker listed is Lynn Butler.

MR. LYNN BUTLER: My name is Lynn Butler. I live at 17414 East Ford Drive in Aurora, Colorado 80017. I am representing myself, although I am an active member of Mile High Jeep Club here in the metropolitan Denver area.

After reviewing your proposal for the Troublesome Wilderness Area, I am in favor of your recommendation or proposal for the Upper Colorado area. I'm in favor of your North Sand Hills recommendation. I'm also in favor of the Troublesome Wilderness proposal for nonwilderness recommendation. I also would be opposed to any proposal that would recommend closing or limiting the use of recreational vehicles in areas where roads or trails currently exist and are available for public use.

Thank you.

MR. YOUNG: Thank you, Mr. Butler.

Are there any questions from the panel?

(No verbal response.)

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MR. YOUNG: Our next speaker will be Rita Ellis.

MS. RITA ELLIS: My name is Rita Ellis, 680 Cortez, Denver 80221. I'm a member of Big Horn Jeep Club of Denver, and I'm a member of Colorado Association of Four-Wheel-Drive Clubs.

I'm an organized four-wheeler. Our club visits the area frequently, and I would request that the area reamin open to motorized recreational use.

Thank you.

MR. YOUNG: Thank you.

Our next speaker is Mr. Bob Tipton.

MR. ROBERT TIPTON: I'm Robert Tipton. My address is 3053 East Fremont Drive, Littleton, Colorado 80122. I represent High Country Drifters Four-Wheel-Drive Club.

I'd like to say that I'm in favor of the preferred alternative. I'm in favor of the nonwilderness designation for the Troublesome area, and I would like to see the North Walden Sand Dunes remain open to ORV use.

MR. YOUNG: Thank you.

Our next speaker listed is Joe Lentz.

MR. JOE LENTZ: I'm Joe Lentz; address is 927 South Salida Street, Aurora, Colorado 80012. I'm a member of Mile High Jeep Club.

In brief summary, I've reviewed your summary

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here for the proposal. I'd like to say that, first of all, I'm in favor of the semi-primitive roads or trails and use in that. I'm also in favor of not turning Troublesome Wilderness Study Area into wilderness. I am also in favor of maintaining the present recreation opportunities. I'd like to say that I wouldn't want to see any of the public lands be limited to off-road vehicle use.

That's all I've got.

MR. YOUNG: Thank you.

MR. BELISLE: What do you mean by "limited"?

MR. LENTZ: There was a point here that said all public lands will be designated as either open or limited to off-road vehicle use, and I just wanted to make sure that it wasn't a limited restriction.

MR. BELISLE: All right, I was just checking to see if you were using the same terminology.

MR. YOUNG: The next speaker is John Munger.

MR. JOHN MUNGER: I decline to speak right now.

MR. YOUNG: Would you care to speak later? We can ask you at the end.

MR. MUNGER: Maybe.

MR. YOUNG: Bob Kiess.

MR. BOB KIESS: I decline to make a statement at the present time, sir.

MR. YOUNG: All right. Darrell Cole?

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MR. DARRELL COLE: My name is Darrell Cole. I live at 1379 South Tennyson Street, Denver, 80219. I represent myself and Mile High Jeep Club of Colorado.

I would like to say I am in support of the preferred alternative. I am in support of not designating the Troublesome study area as wilderness. I would be vehemently opposed to any proposal that would limit or shut off primitive roads to off-road vehicles, because I feel it is extremely discriminatory against a person who may not be physically capable of backpacking into the area or knowledgeable enough to ride a horse into the area.

Thank you.

MR. YOUNG: Thank you.

Any questions?

MR. BELISLE: No.

MR. YOUNG: Our next speaker is Barry Shields.

MR. BARRY SHIELDS: My name is Barry Shields, 4960 South Fox, Englewood, Colorado.

I do support the nonwilderness proposal. I do support organized jeeping, and as a member of Mile High Jeep Club, we also like to do a lot of recreation in the mountains, which is either camping, hiking, or fishing, and we'd like to make sure that all the roads available stay open, as our rec areas are getting dwindled away.

Thank you.

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MR. YOUNG: Thank you.

Stan Brown?

MR. STANLEY BROWN: Stanley Brown, 5445 South Mohawk Road, Littleton, 80123.

I'd like to say I'm in favor of the proposed alternative and I would like to see all of the areas stay open to recreational four-wheel driving that's presently open, and especially the North Sand Dunes.

MR. YOUNG: Thank you.

Our next speaker is Joseph Cleres.

MR. JOSEPH CLERES: My name is Joseph Cleres, 8471 Allison Court, Arvada, Colorado 80005.

I've been a resident of Colorado for about five years. My hobbies are hiking, camping, fishing, outdoor photography, and four-wheeling.

I take exception to the designation of off-road vehicles as off-road vehicles. I believe they are all-road vehicles. They are off-highway vehicles.

I'd like to point out that of the folks that I've associated with -- hikers, backpackers, four-wheelers -- there is no one who loves the outdoors, loves the scenic areas of Colorado any more than the four-wheelers, particularly the organized four-wheelers.

I support the preferred alternative, and I would oppose any closures to motorized vehicles in the proposed study

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area.

MR. YOUNG: Thank you.

Our next speaker will be Elaine Walter.

MS. ELAINE WALTER: My name is Elaine Walter and I'm from 3333 Nebo Road, Boulder, Colorado. I'm here representing myself, although I am a member of the Sierra Club.

I want to thank the BLM for giving us so many alternatives to consider, and I also want to thank them for giving them real word names. I am getting tired of talking about Alternatives I through VII in Roman numberals.

Having said that, though, I found it interesting that there wasn't a subtitle on the natural environment alternative as being the long-term economic benefit alternative.

I support the natural environment alternative as opposed to the preferred alternative, and I feel that I'm doing this not only for environmental and aesthetic reasons and for personal interests, but also because I feel that this is the alternative that will provide the most long-term benefits economically for the residents of that area and for the citizens of Colorado.

The preferred alternative, of course, requires a more intensive management plan than the natural environment alternative, and unless the resources are available from the

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federal government to provide for more intensive management, I think some of the plans that you've made in the preferred alternative are perhaps a little overly ambitious.

Not only that, but I think that the long-term economic benefits of protecting watershed and water quality are extremely important to Colorado, and in this particular area, the benefits of protecting wildlife habitat and other recreational values that encourage outdoor recreation are extremely important.

I found the statement in your newsletter that the development of additional coal in the preferred alternative is important to help us meet the, quote, "national goal of self-sufficiency and energy." In the last ten years, we've all been deluged with many articles about the energy crisis, and we have been told by our government that we're facing a shortage of many minerals. But there's always been an assuring paragraph in all of those articles that we have abundant coal resources for the next number of centuries, up to 500 years I think I've seen.

Certainly in this area there's been adequate development of coal resources to meet our energy needs in this country for a great many years in the future, and I don't think at this time there's any economic benefit to be gained in developing the coal, except for short-term economic benefits. When you have to weigh this against the

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long-term economic benefit to be had from preserving the watershed and water quality, I wonder whether developing more coal at this time is appropriate.

I thank the BLM for recognizing the problems of grazing in the area, and I think that it's an important first step to cut back on some of the grazing so that over-grazing won't occur.

I do support the inclusion of the Troublesome area and the designation of the Troublesome area as wilderness. About four or five years ao, the Indian Peaks Group of the Sierra Club spent a long weekend in what was then the Troublesome-Arapaho Wilderness Study Area as part of the RARE II area, and we spent our time mainly on Forest Service land. In fact, I'm really not aware whether we entered into Troublesome Wilderness Area or not.

But I did find a couple of things interesting about the BLM proposal. One of the things that caused you not to recommend Troublesome as wilderness is because there were private inholdings in the area. First of all, I don't feel that the historical accident of some private inholdings should prevent the area from becoming wilderness.

Second of all, I'd like to point out that in the three or four days that we spent in the area, we didn't notice any significant impact from the private inholdings, and I know that we were gazing out over the BLM area, if we

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weren't actually in it. I haven't tried to retrace my steps on my topos.

The second thing is, I think the limited access to the wilderness area in Troublesome is a plus and not a minus in determining whether or not there should be wilderness designation. I think that an area with limited access should have prime consideration as wilderness, instead of that being a negative factor.

Finally, I'd like to urge you not to degrade the North Sands Nature Area from a natural area to special recreation use, unless you can be assured that you're going to have adequate resources to police the area, and I haven't seen anything in your plan to indicate that you do.

Thank you.

MR. YOUNG: Thank you.

Our next speaker is Martin Walter.

MR. MARTIN WALTER: My name is Martin Walter. I live at 3333 Nebo Road, Jamestown Star Route, Boulder, Colorado. I represent myself and the Union Peaks Group of the Sierra Club.

I do not want to see the Azure Dam built, point number one. If this were a great economically beneficial project, it would already have been built. It would be a waste of my money and the jeepers' money; in fact, worse than a waste, since it would destroy the increasingly rare

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archeological fishing and wildlife resources that are present there, not to mention the very economically beneficial river rafting industry.

Point two, the Troublesome Wilderness Study Area has the only area with a chance for wilderness designation in this resource area and should, in our opinion, be recommended for wilderness. The wilderness designation of this relatively small area, about 9,000 acres, will not, as far as we know, interfere with the four-wheelers' or two-wheelers' present activity. In the times I've been there, I've never seen any off-road or four-wheel vehicles in that area.

I think that this opposition we've heard tonight stems basically from a fundamental philosophical opposition to any wilderness designations at all.

I have a warm spot in my heart for the Troublesome Wilderness Study Area, both the BLM and the Forest Service versions, for I've hiked through a lot of this area, but not all, and I hope that I and any children that may be coming forth can return some day to explore it, and hopefully it will remain in its relatively pristine state.

The term "testosterone poisoning" was coined by my wife to describe the condition she felt were were afflicted by when my friends and I insisted on climbing a local summit during a lightning storm which was depositing electrical jolts within a couple hundred yards of our yet unfried bodies. It

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was an exhilerating experience I shall never forget, and I hope to get the chance again. James Watt should be hoping we should get the chance to go for it again.

Number three, the North Sand Hills Natural Area should remain a natural area. Just leave it the way it is, the way it's presently being damaged.

Number four, I oppose the sale of any large tracts of land where large is defined as larger than 40 acres. My mental model for this is the Small Tracts Act passed for Forest Service land by Congress recently. You might want to trade a parcel here or there, but I would be -- our group would be opposed to any sales, and I would imagine that most anybody interested in using public lands for any purpose should be opposed to the sale of public lands, because it means no trespassing signs, no jeeps, no hikers, no nothing. Already in the state you can't take raft trips across private land on rivers, even though they're wild.

When managing forests, we would recommend that you restrict your activities to areas which produce in excess of 50 cubic feet per acre. This way, you might actually obtain a sustainable yield.

The rangeland grazing should be reduced -- this is the sixth point -- should be reduced to allow recovery of overgrazed land.

Now, the final point here, the preferred

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alternative recommends, in our opinion, too much coal leasing. I like the following phrase from the continuation of present management, Alternative 1. It says, "Coal leasing on federal lands would be limited to emergency leases to continue existing mining operations." Why, then, do we have this sudden preferred alternative recommendation for coal leasing of 45,000 acres or 107,000 acres in Alternative 4? Why is there the preferred alternative recommendation to dispose of, i.e., I would imagine, sell, 17,000 acres of land.

Most of the BLM folks of a local variety involved in this study have given every impression of being very nice guys, so I suggest that Ronald Reagan make good his promise to get the federal government off our backs. I would settle for getting James Watt off the backs of the local BLM folks.

Now, I wish to conclude on a personal note here about some very intense feelings I have about the pressures that BLM must be feeling from Mr. Watt and his appointees to increase coal leasing and to sell off our public lands.

I just would like to say that it is my impression that Mr. Watt is a liar. Mr. Watt has made various public appearances, for example on the Larry King show, a midnight thing I stayed up to watch the guy -- he was on Face the Nation, et cetera -- and he has publicly stated that he never endorsed

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oil and gas drilling in wilderness areas. I seem to remember a year ago that I spent four months fighting his proposals for oil and gas drilling in wilderness areas, and they were successful. Congress agreed with this -- that it was not a sane thing for America to be doing at this time.

He has made several other false statements in public, and he must be banking on just public ignorance or apathy to get away with this. I had a boss once that was a liar; I quit. But I don't recommend that. I recommend that you just do your thing, what you believe in, and don't listen to anybody that lies, because he won't be around much longer, anyway.

MR. YOUNG: Thank you.

Our next speaker will be Kirk Cunningham.

MR. KIRK CUNNINGHAM: My name is Kirk Cunningham I live at 12145 West Nevada Drive, Lakewood, Colorado. I'm here representing the Rocky Mountain Chapter of the Sierra Club tonight, and my comments are both on the draft plan and on the wilderness recommendations.

I have written comments, so I'll just summarize what I have.

First, some good points about the plan. In my personal opinion, this plan and EIS are of higher quality than others that have come out from other districts in the past year. I think the alternatives are fairly reasonable. They reflect

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a wide range of issues and uses, intensities of uses, et cetera. We do not agree with all aspects of the preferred alternative, but at least it reflects some sort of middle position between development, economic development, and preservation.

The writing style is good. Descriptions and prescriptions are fairly candid and readable and, in general, it's not a bad effort, although we don't agree with some of the policy biases. The maps are nice, as well.

Some not so good points. In general, all of the alternatives with respect to the continuation of present management appear to require intensive management. This requires money, personnel, et cetera. Apparently, the BLM is not likely to come into any great windfalls of money in the next few years, so we doubt or we are sceptical, at least, that these alternatives will come to pass in any meaningful way.

At the very least, however, we believe that the final version of the plan should have some sort of discussion of the budgetary and manpower requirements for each alternative. This will give the public, ourselves, Congress, and whoever else wants to judge the document a better idea of whether and what is feasible.

Our second area of disagreement is in mining issues, particularly coal mining. The preferred alternative

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says that 45,000 additional acres will be studied for that purpose. The Sierra Club as a national organization is involved in a lawsuit with the Department of Interior concerning its coal leasing program on the basis that it is too much too soon, with no great economical reason. And, of course, this particular plan for this resource area is just an example of that.

This mining apparently would adversely affect an aquifer, perhaps a considerable wildlife habitat, for water fowl, particularly -- the environmental statement says it's the second highest water fowl population in the state -- and would have, also, environmental or economic impacts on the Walden area, not all positive, according to the statement.

In addition, this alternative, the preferred alternative, in the coal leasing area, in a sense puts a lot of economic activity into the Walden area, whereas, in contrast, the recreational alternative puts a lot of emphasis on the area around Grand Lake, where more people exist. So in terms of helping people, I would think that the recreational alternative would be better.

We certainly would support the liberal use of no surface occupancy for oil and gas exploration, particularly on sensitive areas.

As far as grazing is concerned, we think that the statement's fairly good in its discussion of grazing.

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The land is certainly in fairly poor condition and needs a great infusion of funds and effort to improve the range, both for wildlife and for livestock.

We certainly support any more money for this purpose, for fencing and so forth to protect riparian areas and also to keep the cattle out, but again, we're sceptical that this sort of level of funding required will come to pass.

If that is the case, if our fears are borne out, then perhaps a greater reduction than 13 percent would be necessary.

On timber, we are pleased that the BLM has adopted at least some sort of slope and productivity standards for timber operation. This makes them in a better position than the Forest Service at the moment. We, however, have consistently advocated as an organization a productivity standard of at least 50 cubic feet per year per acre to guarantee long-term sustained yield.

We do not believe that whatever final disposition for the Troublesome WSA BLM decides on, we do not think that a lot of timber activity is appropriate for this area, it should be left in some sort of wild and natural condition, both for wildlife, watershed values, for recreation. The timber resource in BLM lands is not so important that one needs to go into areas which have high natural qualities.

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The wilderness recommendation, we feel that the BLM has properly recognized the importance of outdoor recreation to the Kremmling Resource Area. This is certainly an improvement over, say, the Glenwood Springs Resource Area plan.

Its nonwilderness recommendation for the Troublesome is, therefore, kind of an anomalous position. We think that the economic opportunities foregone by wilderness status would be quite small, and we think the plan states that, but the recreational, wildlife, water quality values would be substantial. The wildlife habitat appears to be quite good.

There is, of course, a fair amount of wilderness in the area, but, on the other hand, as Table 3-26 on Page 107 states in the plan, primitive camping and fishing and hiking and climbing are all very large uses in the area and are increasing very rapidly. According to this table, at least, hunting, ORV or other motorized uses are relatively static.

Therefore, from that perspective, at least, wilderness would appear to be desirable.

The other complaints that BLM had about wilderness, namely the private inholdings, this apparently was not a problem in the Craig District with Bull Canyon WSA, which had exactly the same situation, or apparently the

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same situation.

We also believe as an organization that roadless areas are unique, so whatever the local uniqueness of that wilderness area is, that wilderness study area, on a national scale such roadless areas are, in fact, rather unusual.

Of course, we think the BLM should take a more -- a stronger stand with respect to the Azure Project and the protection of float-boating on the Colorado and other uses of that canyon. These would be, of course, impacted: wildlife, fisheries, and other types of recreation.

The DEIS for the Azure Project itself is a virtual litany of adverse impacts, and we believe that the BLM should exercise whatever control it has in granting permits, or whatever, to oppose this project, as they do in the environmental alternative, I believe.

Finally, in another final recreation topic, the change in status of the North Sand Hills from natural area to special recreation management area is problematic, in our view, principally because we're not sure or we doubt very strongly that the BLM has the resources to police any restrictions that they may make. And in the absence of that, granting easier access will only make any abuses that occur more likely. So better access is not necessarily a good thing in that particular area, nor, for that matter, in wilderness. To some extent, bad access is an advantage to

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wilderness, it protects it.

Finally, on sale of public lands, we admit that the BLM has an extreme management problem on its hands with the scattered nature of the properties it is supposed to manage. However, we believe that BLM should, at the very least, take as its first priority the exchange of these lands instead of their sale, exchange with private parties to block them up and make them more manageable.

Finally, I think that our organization would support the environmental protection alternative as the one that is best in taking all the things into consideration.

Thank you.

MR. YOUNG: Thank you, Mr. Cunningham.

Our next speaker is Robert Kurtz.

MR. ROBERT KURTZ: My name is Robert Kurtz. I live in Arvada, Colorado, 8478 Allison Court, 80005. I am a member of the Mile High Jeep Club, a member of the United Four-Wheel-Drive Association, and the State of Colorado Four-Wheel-Drive Association.

I am a native of Colorado, third generation. I've been a jeeper since 1956. At that year, I was 16 years of age. I've seen a lot of land, beautiful land, and enjoyed it on primitive access.

I am very concerned that a lot of this kind of thing has been taken away from me. I cannot take my

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father where he was born on an old county road that's in wilderness area up here in the Indian Peaks area, which I know is not in your jurisdiction.

But I am opposed to any wilderness at this present time, because I don't think the term "wilderness" is being appropriately applied and obeyed, and I don't think we have the proper rules, gentlemen. If we are to set aside land for our future generations, I say we set it aside and we protect it, but absolutely no one goes in there, only to protect it from the ultimate destroyer -- fire, animal life disease, plant life disease, water and waterlife disease control.

And I would like to remain enjoying the trails that exist in there that I have enjoyed in the Troublesome area, specifically, and the sand dunes. We don't ask for a whole lot. We're not asking you to give us something because something's been taken away from us. I would like to have what remains, gentlemen.

I thank you.

MR. YOUNG: Thank you.

Our next speaker will be Patricia Graham.

MS. PATRICIA GRAHAM: My name is Patricia L. Graham. I live at 4215 Teller Street, Wheat Ridge, Colorado 80033. I am a member of an organized recreational four-wheel-drive club, the Big Horn Jeep Club of Denver, Colorado, a member

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of the Colorado Association of Four-Wheel-Drive Clubs.

I request preferred alternative be accepted as recommended, not suitable for wilderness designation, and oppose closure of roads and trails to recreational activity.

Thank you.

MR. YOUNG: Thank you.

Our next speaker will be Sharyl Kinnear.

MS. SHARYL KINNEAR: My name is Sharyl Kinnear, and I live at 2260 Floral, Boulder, Colorado.

I'm here tonight because I'm very concerned about land use in Colorado, and I appreciate the opportunity to voice my opinion and contribute to the BLM planning and wilderness review process.

I'd like to begin by saying that I think the Kremmling Resource Management Plan is a very readable document. It is one of the best planning documents put out by a land agency in Colorado, in my estimation. I would like to see this plan used as a framework for future plans, and I think the sincerity is evident in this plan, and I think it's because it's prepared by staff that lives and works in the area and it was not prepared by a staff who was hired just for the planning process.

However, having said that, I am disappointed with the BLM's preferred alternative in the document. Instead, I would persuade the BLM to look a little harder at the

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natural environment alternative. I feel the natural environment alternative is superior to the preferred alternative in many respects.

To begin with, the natural environment alternative is the only alternative to recommend the Troublesome WSA for wilderness. As is stated in the plan on Page 144, the area has the mandatory wilderness characteristics of size, naturalness, and outstanding opportunities for both solitude and primitive and unconfined recreation.

The plan also states that the area could be reasonably managed to preserve its wilderness character.

Being a resident of Boulder, it has become increasingly difficult to find areas where there are no imprints of man. The Indian Peaks Wilderness Area will probably begin a quota system soon because of the use, and we can see statistics where use will double in ten years for wilderness areas. We need more wilderness areas.

I would recommend the Troublesome WSA as wilderness because it's a mid-elevation ecosystem, and a lot of areas we have in Colorado are the higher alpine wilderness areas. This would be representative of the mid-elevation ecosystems and, also, it contains cultural resources in the area.

On the same subject of cultural resources, I'm concerned with the protection of the cultural resources in

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the North Sand Hills area. It is my belief that because of the problems inherent with protecting the cultural resources in the area, that is, the shifting of dunes and the manpower required to patrol the area, it would be best to prohibit off-road vehicle use in the North Sand Hills area. I support the natural environment alternative, since ORV use would be prohibited in this area.

Under the natural environment alternative, only two percent of the total acreage in the resource area would be closed, and that would be the North Sand Hills area and Troublesome Wilderness. Ten percent would be limited to ORV use and 88 percent would remain open to ORV use.

Third, I support the natural environment alternative because it recognizes the excellent recreation opportunities along the Colorado River and the incompatability of the Azure Project with the objectives of this alternative.

My fourth concern is the issue of coal leasing. The preferred alternative attempts to identify areas for expansion of leasing to fulfill future administration quotas for the mining of coal, and I think this is unnecessary. In fact, the plan itself states on Page 82 that the economic conditions for production of coal are less than ideal in the area, and I quote from Page 82, "The increased cost of transportation can make North Park coal unprofitable to produce."

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Other reasons not to increase the acreage for coal leasing is the disturbing effects on wildlife and it will adversely affect livestock grazing. There is also reason to believe that it will alienate surface owners in the area.

On Page 83 of the document, we see that 14 out of 30 surface owners who responded to a survey conducted by the BLM were opposed to surface mining on their lands where the federal government holds the mineral estate.

I think the natural environment alternative is entirely adequate. It continues to support existing operating mines.

Also, since the plan is to be reviewed again in ten years, if the BLM feels at that time there is a need for coal leasing to increase, they can do so at that time.

I think, in general, that the staff is to be commended for the plan they put out, and I think you for taking my comments under consideration.

MR. YOUNG: Thank you.

Our next speaker will be Merry Havens.

MS. MERRY HAVENS: My name is Merry Havens. I'm from Boulder, Colorado.

I'm here because I would prefer to see that Alternative 7 be the preferred alternative, instead of 2. I would specifically like to see the Troublesome Area protected

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as wilderness. I think that there's a need in Colorado for more middle elevation wilderness.

On the issue of coal mining for the short-term economic gains, I'd like to contrast what Rene Dubos says about wilderness and its value as far as energy is concerned. It says: "It has been shown, for example, that wilderness accounts for 90 percent of the energy trapped from the sun by photosynthesis and, therefore, plays a crucial role in the global energy system."

I think that speaks for itself.

Wilderness is a scarce resource, offering perhaps the only wilderness type qualities for people that are seeking solitude, naturalness, beauty, clean air, unpolluted streams, unscarred hillsides.

With different statistics stating the increased wilderness use ranging from 8 to 12 percent, if we take an average 10 percent, that quickly tells us that the doubling time of wilderness use is seven years. Since wilderness does not increase every seven years by two, that means that the visitation increase puts an unsurmountable pressure on these vanishing parcels of land. That's a lot of pressure to provide us with that solitude.

I'd like to go back to Debos about increased used of wilderness and how the increased visitation on the diminishing lands affects the land.

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"The trails and vegetation are damaged, the animal population is disturbed, the intimate contact with nature becomes increasingly rare, the crowds cannot enjoy solitude."

The recreational alternative may provide for the short-term recreation benefits, but, because it will allow for a gradual decline in environmental quality due to intensive use, it will not insure a high quality recreational experience for the long term. Only the natural environment alternative will protect the irreplaceable natural resources of the Kremmling area for the enjoyment of future generations.

I'd like to close by saying that we have to ask ourselves what the real losses are if we no longer are able to benefit from wilderness because we sold out.

MR. YOUNG: Thank you.

Our next speaker will be Kenneth Beaudrie.

MR. BEAUDRIE: I decline.

MR. YOUNG: Okay. Next, Roz McClelland.

MS. ROZ McCLELLAND: My name is Rozlyn McClelland; I live at 483 Marine in Boulder. I am the coordinator for the BLM Adopt-A-Wilderness Program of Colorado Wilderness Network. The Colorado Wilderness Network is a coalition of environmental groups who attempt to preserve wilderness in the state. I'm also on the Board of Directors of the Colorado Open Space Council.

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Myself and my family moved to Colorado 12 years ago, and since that time we have visited many of the wilderness areas in this state and hope that our children will be able to visit them in the future.

I appreciate the opportunity to comment. I would like to say, unqualifiedly, that this is a superb document; that it is tremendously good reading; it's broad-ranging in its alternatives; it's sensitive and provides clear explanations for everything you want to know. I think it's a prototype of its kind. We probably won't see any plans like this coming out again in the state. It's going to set very high standards that we can use to apply to future studies.

Specifically, I think the range of alternatives is good, in that it allows the public access to the decision-making process of the BLM. It describes in a very fine breakdown the different interests of the public which allows the interests of each constituency to be expressed fully. It also allows the BLM to sort out and balance its different publics. I think it makes the public feel that each of us in our different concerns has been heard.

I think, by the same token, it can make -- this kind of wide range of alternatives can make for problems in how to allow a clear majority or clear alternative to emerge. But I think I would recommend this as a format for future plans.

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I also like the use of ranked priority uses, which I think provides clear direction for the future, but if something comes up in that a particular use should be changed, there is a ranking so that a second use can then come to the fore.

I also think that the rationale for all the decisions is very clear and explicity, presented in a very credible way so that you really feel you know why decisions having been made. It's clear that the BLM is trying not to create too much conflict, not to go too far to the extreme one way or the other. They've made this very explicit. Their socio-economic analysis is beautifully formulated, all of which enchances the credibility of the document.

I also like the way that voluminous documents are cited as resources. They're not brought into the text, but you know they're there in the office and you feel that that is good backup substantiation for everything in this document.

The maps are excellent. There is good detail in the charts and in all the graphs, and there is a lot of talk about how future management can adjust to upcoming situations.

I didn't see a whole lot on future road mileages that are planned for construction, and I don't know whether that's because there's not a way for that to be determined yet.

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I think the preferred alternative has many strong points. I think its timber analysis is reasonable and balanced, on the whole. The grazing proposals have very good forage improvement planning in good detail. The one thing that bothered me that I'm a little concerned about with the grazing aspects of the preferred alternative is that on the maps it shows a large area northeast of Kremmling for grazing priority use, whereas on the natural environment alternative it's shown as a soil erosion control area, which makes me think that possible that extent of grazing in that particular area could be damaging to soil. Otherwise, I think the grazing is a good aspect of the plan.

The wildlife part of the preferred alternative seems reasonable. The recreational aspects look good and the soils and water treatment sound plausible.

Less sensible, to my mind, are the parts of the preferred alternative on coal, oil and gas leasing, the cultural management, the land disposal, the wilderness, and the resource natural area treatments. Just coincidentally, from my point of view, it just so happens that the natural environment alternative seems to handle all those aspects very nicely.

For the cultural resources, the statement -- one reason I'm concerned about the probable damage to some of the cultural resources from the preferred alternative is a

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statement that says, "Unavoidable adverse impacts in the preferred alternative are second only to the adverse impacts in the economic benefit alternative."

More specifically, I would like to see the ficelia formosula site (phonetic), instead of being recommended for ACEC status as it is in the preferred alternative, recommended for a resource natural area, which would give it the proper treatment and the study possibilities and I think would preserve it with more assurance in the future.

With the North Sand Hills cultural area, I find that a very hard one to deal with. I understand that there is an East Sand Hills area which is similar and which is protected and does not have ORV use and, also, that the North Sand Hills area is currently the only sand hills area in the whole state which is available to ORVs. On that assumption, I would tend to go along with the preferred alternative that leaves that area open to ORV use.

What I'm concerned about, however, is that the future protection of those cultural artifacts is reliant on what I gather is a very cooperative spirit on the part of the ORV users, on the good will and cooperation and self-discipline of those users as it now stands. Both the users could change and the attitudes of the users could change in future years, plus the current management depends on tremendous fancy footwork, very elaborate planning on the part

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part of the BLM to change the fences all the time, depending on which way the wind blows.

I would like to see specified in the plan, if this is possible, if it's going to be declassified into a special recreation management area, that there be completely solid future protections that would take into account these problems and the flexibility in future management that I've just cited. I don't know if that's possible.

I was very pleased to see the language in the land disposal section of the document. It was very close to what I have been recommending in other plans which have emphasized land sales and give-away of public lands for the benefit of the public treasury. This document, instead of talking about selling public lands out from under us, talks about consolidating and identifying at least some lands for acquisition, which I was really, really pleased to read. It also gives very clear restrictions as to what lands can be available for sales or disposal.

It didn't specify, although I may not have read it accurately enough, whether the lands for disposal were going to be for sale or for exchange, and I would recommend strongly that they be for exchange so that the basic public land base is not changed.

Despite the good forumlation of the land disposal program, I'm sorry to see that the acreage identified

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for disposal under the preferrer alternative is the maximum 16,800 acres, as opposed to the natural environment alternative, which specifies only 600 acres. The preferred alternative, I think, will have -- in terms of the amount of acreage to be given away, will have some damaging environmental effects. To me, it looks like, as we've seen in some cases, for exampled in the coal leasing figure that's in the area, an example of higher management coming down and telling the resource area what to do, because I think the resource area, given -- left to itself, would have recommended a smaller amount of acreage for disposal.

With the Troublesome Wilderness Area, I would recommend wilderness designation for this area. I don't -- my value system would say that the roadlessness of the area and its special natural qualities make it too scarce and too valuable a resource to be turned over to timber and general recreational uses, as is proposed by the preferred alternative.

I feel that when the BLM says that the area does not contribute to diversity of the region, that it is using the potential model, which is too generalized in its breakdowns to really zero in on the distinctive topographical and vegetative features of this particular area which, on a local basis, make it quite distinct regionwide. It's also the only middle elevation wilderness area in that region.

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There are other wilderness areas, but not of that particular form. I would recommend some other more finely distinguishing system be used to evaluate its diversity.

Also, the Troublesome area's 8,000-some odd acres, in a resource area of 1.2 million acres. This represents six-tenths of 1 percent of the entire resource area that would be recommended for wilderness. The BLM wilderness management -- wilderness study policy recommends under its criteria for wilderness qualifications that a certain amount of land in each resource area be set aside for non-manmade purposes, for natural resources for their own sake, and I quote: "Emphasis should be on multiple natural values of roadless areas as part of an overall multiple-use framework for general area, rather than primarily recreational uses or public use values." In other words, a certain portion of any region should be left completely natural because of watershed and wildlife and plant and air qualities that it will contribute.

I don't think it's too much to ask the Kremmling Resource Area to set aside six-tenths of 1 percent for this purpose in such a large land base, and I think that they could be in violation of BLM planning process not to do so.

Maybe I better get on with some other points here.

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MR. YOUNG: One more minute, Roz.

MS. McCLELLAND: I'm pleased to see that the preferred alternative avoids recommending a maximum acreage for coal leasing, despite strong pressure from the Administration to turn as much of the public domain over to the coal industry as possible. However, I'm concerned that even this reduced range is far more than economically can be developed.

The unlikelihood of coal being developed on the scale propoed in this plan is evident, first, in the closing of two of the three coal mines in the region and the fact that of the 150,000 acres under lease in this state, only 25,000 acres is actually in production, and that on a nationwide basis we have enough coal in existing mines, not to mention what's under lease, to last to 2050.

For that reason, I feel that this coal leasing in excess of demand to this extent is clearly the Administration's way of removing public lands from public stewardship. Assigning priority coal use to so much acreage in the Kremmling plan would prevent BLM from exercising other more beneficial management options.

So I would recommend that the coal leasing process be speedily expedited so that lands where coal development is not economically feasible because of transportation, surface ownership problems, and geological problems can be freed up for other purposes. Even the 45,000

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acre figure in the preferred alternative is too high, considering that much of the leasing would take place in areas where coal production would meet with serious technical problems.

That's really basically what I wanted to say. I'm concerned that the oil and gas leasing in the preferred alternative looks to be greatly in excess of demand and, again, it's turning over control and stewardship of these lands to the oil and gas industry, whereas a smaller amount of recommended acreage would allow BLM to manage for more benefical use.

So basically, I recommend that the third alternative with the serious exceptions I've mentioned, and I really want to congratulate you on a very fine plan.

MR. YOUNG: Thank you.

Our next speaker is Tod Young.

MR. TOD YOUNG: My name is Tod Young, South Star Route, Lyons 80540. I'm representing myself and, along with Mr. Cunningham, the Rocky Mountain Chapter of the Sierra Club.

I support the natural environment alternative because it is the only alternative which recommends wilderness designation for the Troublesome Wilderness Study Area and, also, would prevent construction of the Azure Dam.

Inasmuch as Mr. Cunningham and Ms. McClelland

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have provided you with such excellent and thoughtful testimony tonight, I think I'll restrict my comments to addressing the generic issue of which this management proposal is but a local specific.

The public land development philosophy of President Reagan, Secretary Watt, Director Burford are deplorable, to say the least. Public lands do not need to be dug up, drove into, cut down, built up, overgrazed, or dammed in order to be of benefit to the public. These lands serve us all just quite well indeed just as they are. Please let the Congress be advised by my words tonight that I do not support their public land policies or the policies of the Reagan Administration.

Thank you.

MR. YOUNG: Thank you.

Our next speaker will be Dorothy Cohen.

MS. DOROTHY COHEN: My name is Corothy Cohen, 2845 Elm Avenue in Boulder.

I recommend that the Troublesome area be designated as wilderness. I oppose the building of the Azure Dam, because it's going to damage archeological sites, the possiblity of wildlife damage and recreational users for the river.

I also recommend that the North Sand Hills area not be downgraded to specific recreational area.

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I will have more detailed comments in a letter. Thank you.

MR. YOUNG: Thank you.

Our next speaker will be Karen Watt.

MS. KAREN WATT: No relation. Karen Watt, 12285 West Texas Drive, Lakewood 80228.

First, I find the term "off-road vehicle" very offensive, and it is to many four-wheelers. We are users of trails, but we do not go off roads.

Second, I'd like to state as four-wheelers, we are recreation users. Not including four-wheel vehicles in recreation areas is grossly unfair. Just to automatically assume because we are four-wheelers that we are going to go in and tear up an area is unfair.

We are, as members of Mile High Jeep Club, involved in the Adopt-A-Trail Program through the Forest Service. We do care about the land and its use.

I'd like to see the North Sand Dunes open. Thank you.

MR. YOUNG: Thank you.

Our next speaker will be Harriet Morrison.

MS. HARRIET MORRISON: I'm a little unprepared because I came this afternoon to get the material and it had closed.

I've lived here in this area for about 30 years

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and I'm a geologist. I feel, from a geologic standpoint -- and our son and daughter-in-law have been in alternative energy and I've followed that quite closely -- I feel there are better ways to solve our energy problems than tearing up our mountains and our plains and all.

These things take much longer to heal than we ordinarily think of, and when we once disturb them, the ramifications are much longer lasting and harder to erase. They are harder to control once we set up new processes. It's harder to get a hold of them than you would have thought, than I would have thought.

The other thing that has impressed me is that since I have been here, our beautiful valleys and the more attractive areas have just filled up. All you have to do is drive over to Dillon, and where are those people going to go if we don't provide recreational areas that we are not using so heavily now?

I see the explosion, and I remember what's happened to Rocky Mountain Park and other areas since I've been here. It used to be anyone could wander anywhere they pleased to camp, and now they're just full to overflowing. It's really hard for a person who is young enough so that they don't have the longitudinal perspective to realize how much we may need some areas later. Even though I can see there are good reasons for other uses now, I think we should be more

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cautious than is our wont. I love these areas, and I'm sure you do. I just hope we take a long view when we consider them.

Thank you.

MR. YOUNG: Thank you.

Our next speaker will be Larry Swink.

MR. LARRY SWINK: My name is Larry Swink. I reside at 9536 West Maplewood Avenue, Littleton 80123. I'm here tonight representing the Colorado State Association of Four-Wheel Drive Clubs. I am an associate member of that club and have also been appointed as the land use coordinator for that club, representing their 750 members and associate members.

I would like to go on record as stating that we do approve of the preferred alternative for the Kremmling Resource Area. I would like to make kind of a personal statement concerning the Northern Walden Sand Dunes, I think is the way it's designated, in that, as it was brought up earlier tonight, it probably is the only area of its type, not only probably but it is the only area of its type that's actually open to recreational four-wheelers. I would like to see that that stays open, and I heartily appreciate your keeping it open at this time.

It seems to me that with the influx of people coming into the Colorado area, especially the Denver area,

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they're predicting that somewhere in the neighborhood of, I think it's a thousand people a month or something like that, moving into the Denver area.

We have the opportunity to invite the people into the state to live, for recreation, and yet we have a tendency to be just simply closing down lands for these people to go. I don't know where they're going to go. I, for one, don't really want to be kind of found huddled around the steering wheel of my recreational vehicle, caught in a traffic jam on I-25, looking up at the mountains that have been shut down to us.

Thank you.

MR. YOUNG: Thank you.

That's all the speakers we have signed up. Is there anyone else who would like to speak?

MR. JERRY CRONK: My name is Jerry Cronk. I live at 8487 Yarrow Court, 80005. I represent myself, and I also represent Mile High Jeep Club.

I, unfortunately, did not come prepared tonight to make a statement, but based on what I've heard tonight, I've done some rough-drafting, and I very quickly perused the booklets and all that were available. I find myself in agreement with not only one alternatuve, but I find myself in agreement with three alternatives and I'd like to take and address each one of those.

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First of all, I'd like to say that I'm a native of Colorado. I've been here for 38 years. I was a backpacker long before I was a four-wheel-drive. As a matter of fact, being a backpacker, I find myself in favor of the Troublesome Wilderness, which is a part of the natural environment alternative.

However, I would caution you that we, as Americans, love wilderness to death. I cite as an example: I used to backpack in an area called Chicago Basin, which can only be reached by riding the narrow guage train from Durango to Silverton. It stops in an area called Needles. You get off the train and walk into Chicago Basin.

I used to go into Chicago Basin and see probably one or two other people there. The last time I went into Chicago Basin was 1971. Twenty-some people were waiting to get on the train, haivng exited from Chicago Basin; there were another 30 people waiting to get off the train to to into Chicago Basin. I got in there and found there was not a stick of wood; there were fire rings everywhere.

So I think we, as Americans, tend to love wilderness to death. I agree with what the lady said earlier, that Branard (phonetic) Lake and other areas have so many people in them now that they are totally being destroyed. So I think that we do need areas, but I think that we should

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look at them with caution. But I do agree with the Troublesome Wilderness Area, that alternative.

I'm also in favor of the preferred alternative, especially in keeping the North Sand Dunes open, because, as someone also stated, the North Sand Dunes is the only sand dunes in the state of Colorado that is open to four-wheel-drive vehicles. They are not off-road vehicles, they are four-wheel-drive vehicles. I have never driven my vehicle off road. I've always stayed on the designated roads or trails.

I find myself in agreement with the energy and minerals alternative. It's kind of a rough stand to take. Under the provisions of that, locateable minerals, such as oil and gas, would remain available. I like that alternative. Whether or not we agree with the development of natural resources, their development is a fact of life. Resources will be developed because of the demands of our technological society.

The only question is, How will these resources be developed? Whether or not we accept the fact, we -- four-wheel-drive owners and backpackers alike -- enjoy the benefit of products developed by a technological society. As a case in point, if I could snap my finger and eliminate all of the products derived from minerals, gas, oil, and coal, I fear that the vast majority of us would reveal more

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than we would want to.

I am unalterably opposed to the sale of any and all lands now managed by the Bureau of Land Management for any reason whatsoever.

Thank you very much.

MR. YOUNG: Thank you.

Is there anyone else who would care to speak at this time?

MR. CHARLES GINDER: I'm Charles Ginder. I live at 136 Baylor in Longmont 80501.

I'm a jeep owner, and I just feel that if, like there's one lady that said that she's not been to a place that has not had human footprints on it, and I feel that I don't see why she should be there if she doesn't want the footprints to be somewhere. You know, if she wants it wilderness, she shouldn't be in there anyway.

I also feel that we, as jeep owners, have the right to go anywhere that the hikers do, because it's our land as much as it is their land, you know. Our taxes buy it, our taxes keep it up to a extent. But I don't feel that they should have added privileges over us, just because they would rather walk than drive.

I stay on roads when I jeep and I don't litter, which I've seen some hikers, you know, they just litter away. They scatter all their garbage and stuff around, and I don't

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feel that it's right to let them walk all over and we cannot go the same places they go just because we drive.

Thank you.

MR. YOUNG: Thank you.

Is there anyone else who would care to speak?

MR. LLOYD MATAKEN: My name is Lloyd Mataken (phonetic) and I live at 8141 Chase Way, Arvada, Colorado 80003

I came here tonight very unprepared. I didn't know about this meeting until this afternoon, and that upsets me, because I am a property owner in the Kremmling area that you are talking about.

First all, I think there's records at the county seat who owns property. I think the property owners should be asked a little bit about what's going on around them.

I own a four-wheel-drive; I have for years. IT's a lifestyle when you try to exist in that country in the wintertime, especially. I've seen a lot of things going on up there. I'm not trying to throw stones at anybody.

I don't understand why we can't have a wilderness area with a road through it, and I really don't know what your definition of a road is. I sat here tonight and they talk about the Kremmling area, Troublesome area, I guess I should call it, as a wilderness area. Well, to me, I don't see how it can be. There's jeep roads all over those

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1 darn hills that's been there for more years than you people
2 are old in here. They was running wagons up and down those
3 hills. I can show you places where they homesteaders cut
4 timber up there and drug trees down the side of the mountains.
5 The trails are still there. You can drive a four-wheel-drive
6 up them. And I don't know, it's been a way of life.
7 Why can't we have a wilderness area with roads
8 in it? As I see it, a wilderness area with a corridor, if
9 you want to call it, you would have more of a wilderness area
10 than you have now in your wilderness areas, because people
11 would stay to the corridor, say a 300-foot corridor, and they
12 would look off over here and they would see a wilderness area.
13 It would be there, a true wilderness area, with nobody in it.
14 And sure, your right-of-way, if you want to
15 call it that, would show its wear, but the wilderness area
16 would be there for everybody to see.
17 Thank you.
18 MR. YOUNG: Thank you.
19 Is there anyone else who would like to speak?
20 (No response.)
21 MR. YOUNG: Okay. As I stated before, the
22 hearing record will stay open until May 25. Written comments,
23 in addition to what you've given tonight, may be addressed to
24 the Kremmling Resource Area Office, P.O. Box 68, Kremmling,
25 Colorado 80459.

COMMENTS ON THE DRAFT RMP/EIS RESPONSES TO COMMENTS

B. Responses to Comments

The numbered responses below correspond to the numbers on the margin of the comment letters and hearing transcripts in the preceding section. Following the response number is a list (shown in parenthesis) of the letters and/or public hearings where the comment was raised. If a change to the text of the Final RMP/EIS has been made in response to a comment, that has been indicated in the response. If not, the response is an attempt to clarify a portion of the text, or explain why a particular issue has or has not been addressed.

The responses have been grouped together by issue topic.

GENERAL

Response No. 1, (Source: 12, C and D) Available funding will be a limitation. However, recommendations were made based on resource needs and public demand. Each recommendation has the potential to be implemented in an economically efficient fashion. A prioritization of most of the recommendations for each resource will occur prior to plan implementation.

Response No. 2, (Source: 33) The Bureau will recognize County Land Use Regulations and Codes to the fullest extent possible where not inconsistent or contrary to Federal Laws, regulations, and policies in the issuance of any Free-Use Permit for the public lands. The County will be notified and comment solicited prior to the issuance of any oil and gas and mineral exploration permits. A new separate Memorandum of Understanding covering these concerns will be developed between the Craig District Manager, Bureau of Land Management and the Grand County Board of Commissioners.

Response No. 3, (Source: 51) The priority areas identified on the map for each alternative determine how each of these priority areas will be managed for the various land uses which may take place in that area, and how conflicts between land uses would be resolved. Please refer to Page 5 of the Map Addendum that accompanied the DEIS for an explanation of how various land use conflicts would be resolved under each priority area.

Response No. 4, (Source: 51) The RMP/EIS is in compliance with the planning regulations and no new draft documents will be prepared.

Response No. 5, (Source: 51) The RMP/EIS is specific enough for master planning and is sufficient to provide the necessary guidance from which to enter the coal activity planning phase. Supplemental environmental analysis will be prepared before the Bureau offers any areas of coal leasing, including an EIS when appropriate.

Response No. 6, (Source: 51, Hearing A) Refer to Implementation and Monitoring Section in Chapter 3 of the final RMP/EIS.

Response No. 7, (Hearing C) The Continuation of Present Management alternative described in Chapter 3 explains the *present* degree of management. The map identifies only those *existing* areas where priority uses were established to achieve specific intensive management objectives such as intensive management for forest product production, existing grazing allotments under management plans, developed oil and gas fields, existing coal leases, and existing intensively-used and managed recreation areas.

Response No. 8, (Source: 52) While each resource was analyzed separately, cumulative impacts and impacts from other actions were specifically targeted for analysis. Effective mitigation was an internal consideration for each resource's analysis, which may have led to an apparent use of "tunnel vision"in the final discussion of the RMP/EIS. Interdisciplinary analysis takes place at every stage of the planning process. An interdisciplinary team was formed at the beginning of the process and functioned through preparation of the final RMP/EIS.

Response No. 9, (Source: 52) The level of data you request is not a requirement of RMP level planning (See response Number 13). Because this RMP does not analyze site-specific proposals, only a relative intensity of potential impact levels could be foreseen. Certain alternatives were close in levels of impacts but, the management goals and emphasis were distinctly different (See Response Number 17).

Response No. 10, (Source: 52) Without site-specific impacts or projects outlined, site-specific impacts could not be defined. However, the type of anticipated impacts that would result from various activities are identified and compared.

Response No. 11, (Source: 52) Cumulative impacts were analyzed for each critical resource in conjunction with all other actions and management goals. Beneficial impacts were noted in various re-

source elements in certain alternatives. Cumulative impact analysis also took into account current laws and regulations which would effectively mitigate adverse or significant impacts. Cumulative effects were not evaluated as significant, given continued compliance with existing laws and regulations.

Response No. 12, (Source: 52) "Divine guidances" are current laws and regulations. As such, they were not included in this document because of space limitations.

Irreversible/irretrievable commmitments of resources were noted for certain resources. Mitigation is one method of limiting, preventing, or substituting of such losses. The BLM does indeed assume that mitigation will be effective.

Response No. 13, (Source: 52 and 55) The majority of your comments about the BLM's planning system appear to result from a misunderstanding of the planning system and how it is supposed to work. A mistake often made is to assume that the product should be complete enough to allow immediate design of projects for the field upon completion of the Resource Management Plan (RMP). When one tries to do this level of planning for an entire resource area and give equal treatment to all resources, it becomes an impossible task within any reasonable timeframe and within budget constraints. Looking at this problem, it becomes obvious that more than one level of planning is needed. In fact, in the management of the public lands, BLM deals with basically three levels of planning for its resource areas.

To understand what it is that we are trying to accomplish when we prepare an RMP, we must recognize these three levels of planning. The overall or master planning level is the RMP. The RMP states what resource uses will be allowed or prohibited throughout the resource area and provides priorities and guidelines for these uses. For example, the RMP should determine whether oil and gas development would be allowed within a scenic and recreational river corridor, and if so, what kinds of restrictions might be placed upon the development. Likewise, the RMP will determine areas that are suitable and unsuitable for coal leasing, and areas where grazing will be allowed and to what degree. RMPs are "issue driven" meaning that they are designed to key in on significant issues identified at the beginning of the planning process. They are not designed to cover all aspects of all resource programs. The degree of emphasis and analysis is commensurate with the issues being addressed.

The middle level, which we call activity planning, determines how an individual resource is developed or protected in a particular area. The activity plan is limited by the decisions made in the RMP. Allotment Management Plans and numbers and locations of tracts for coal leasing as in the regional coal EISs are examples of activity plans.

The on-the-ground site-specific plan is the lowest level of planning. These plans are done to implement activity plans. Under an Allotment Management Plan, a project plan might consist of the exact design specifications and location for a fence or reservoir.

In short, the basic land use allocation decisions are made at the RMP level, providing for allowed and prohibited uses, and when appropriate, use levels and constraints. More detailed program plans are then completed, identifying site-specific uses within the guidelines of the RMP and with additional, more specific environmental analysis. This tiering of planning is not unique to the BLM, but is, in fact, a concept basic to the planning field and used by government and industry alike in a wide variety of applications.

Response No. 14, (Source: 52) The RMP is a comprehensive land use plan that did analyze the cumulative impacts of each alternative. Please see the discussion of the BLM planning system under Response No. 13.

Response No. 15, (Source: 52) Public input was an integral part of the entire process as it started with the very first phase of the process--issue identification--and continued throughout the process. See the discussion of the Planning Process in Chapter 1. In addition, a series of newsletters was published to keep the public informed and to seek input.

The commentor was not present at any of the Denver meetings which were convenient for them, nor were any comments received until the draft review period.

Response No. 16, (Source: 52) The RMP, as revised, has achieved what it was designed to do and has met all statutory and regulatory mandates; therefore, no supplement to the draft will be prepared. State and local governments were generally supportive of the draft as presented and so were most of the commenting public. A considerable amount of information related to livestock grazing has been added in response to public comment.

Response No. 17, (Source: 52) The goal of the Kremmling RMP was to have alternatives that were real. It is not realistic to consider an alternative whose impacts would be such that you know as you create it that it would never be chosen. This has often been the case where you have a maximum development alternative, a maximum protection alternative, the no action alternative, and a "balanced" alternative. Both the maximum alternatives go too far (in opposite directions) to be ac-

ceptable. The no action alternative usually has problems, or the plan would not have been written in the first place. So, naturally the "balanced" alternative is obviously the choice! This, despite the great differences in impacts, is the situation where you have no real choices (alternatives).

The alternatives in the draft Kremmling RMP were derived by designing a set of alternatives that addressed all of the issues which were raised by the public as well as within the BLM. These alternatives were constrained by the requirement that they be implementable or "real". That is, it would not be acceptable to greatly reduce wildlife numbers and it would not be realistic to call for reductions where there was no demand for such a reduction. Nor would it be realistic to think we would be allowed to put most of the ranchers out of business by eliminating all livestock grazing from the public lands. Thus, though the differences in the impacts of the Kremmling alternatives are not great, at least several **r e a l** choices are presented for consideration. There certainly is a difference between recommending designation of the Troublesome Wilderness Study Area or not, or between disposal of 5 2 5 acres of public lands vs. 1 8 , 7 0 0 acres, or between 8,500 acres suitable for coal leasing vs. 107,000 acres.

Interdisciplinary analysis takes place at every stage of the planning process. An interdisciplinary team was formed at the beginning of the process and functioned through preparation of the final RMP/EIS.

Response No. 18, (Source: 52) Because RMP planning was a new approach, a number of BLM "pilot" resource areas including Kremmling were allowed to try various methods of building a plan to see what actually worked and to learn from their experiences. Indeed, it can be seen that what worked well in one area may not be usable in another because of different mixes of land patterns, resources, and resource conflicts.

Response No. 19, (Source: 52) It is not possible to go into great detail about possible environmental impacts and still keep these documents within the page limits of the Council on Environmental Quality Regulations. However, the objective is to make a comparative analysis between alternatives and inform the public and the decisionmaker what the significant impacts of choosing a particular alternative would be.

Response No. 20, (Source: 52) Thresholds - It would be very difficult to establish threshold levels for the resources you refer to. This is due to the lack of detailed data for these resources which would be necessary to even begin to determine what would or should be a threshold level for a resource. However, we do not believe that the impacts of any of the alternatives considered would come anywhere near a threshold level for any resource in the resource area. Most of the non-market resources will more than meet demands for them for the life of the plan under any of the alternatives

Response No. 21, (Source: 52) We are required to evaluate the potential for special management area designations such as Natural Area and ACEC and to so designate if that form of management is deemed appropriate. We are not required to make designations. Both ACEC and Natural Areas designations were considered in both the draft and the final RMP/EIS. The Proposed Plan recommends designating two Research Natural Areas -- the North Park *Phacelia* site and the Kremmling Cretaceous Ammonite site. Based on existing and projected recreation use, designation of the Upper Colorado River and North Sand Hills as Special Recreation Management Areas was felt to be an appropriate type of management.

Response No. 22, (Source: 52) Our experience in the Kremmling Resource Area does not support the conclusion drawn by the commentor. In most instances in the Kremmling Resource Area, mitigating measures have resolved conflicts between resource programs (e.g. cultural resources and wildlife habitat in the energy development areas of North Park). See Response Number 20 for a discussion of threshold levels.

Response No. 23, (Source: 52) See Implementation and Monitoring Section at the end of Chapter 3.

Response No. 24, (Source: 52) The descriptions of the Affected Environment in Chapter 2 and the Continuation of Present Management Alternative in Chapter 3 provide sufficient information for the reader to understand the alternatives and environmental consequences. It is not possible or desirable to summarize all available inventory data and still keep these documents within the page limits of the Council on Environmental Quality Regulations.

Response No. 25, (Source: 52) The acronyms are spelled out in the Glossary.

Response No. 26, (Source: 52) The text has been revised.

MINERAL

Response No. 27, (Source: 13) Provisions exist in the Code of Federal Regulations (43 CFR 3600.0-3) that allow other governmental units and non-profit organizations free use of mineral materials such as sand and gravel.

Response No. 28, (Source: 34) Geologic and mineral information used during the development of the RMP indicates that the Morrison Formation is located in the area in question. This formation is known to contain deposits of uranium that may be exploitable.

COAL, OIL AND GAS

Response No. 29, (Source: 9) The lands in question have not been designated for coal leasing, but have been identified as suitable for further consideration for coal leasing. Before any decision is made, following adoption of the Resource Management Plan, to use this site as a reservoir, or to offer it for coal leasing, a site specific analysis would be done to weigh the benefits of each of these and any other possible uses of the site.

Response No. 30, (Source: 12) No surface occupancy stipulations will be employed for specific tracts and included where appropriate on oil and gas leases. It is estimated that approximately 2,000 acres would be covered by no surface occupancy stipulations in the Proposed Plan, with another 166,000 acres identified for seasonal or timing restrictions.

Response No. 31, (Source: 26 and 42) At the time the Continuation of Present Management alternative was prepared, it was estimated, based on the projection of the three operating coal mines in Jackson County, that coal production would peak at near 2 million tons per year. This was based on conditions that existed at that time. Because of the change in market conditions, this figure was not reached in 1981 or 1982.

Response No. 32, (Source: 42) The Bureau does coordinate with appropriate Federal, State, and local agencies during all phases of coal leasing, development, and reclamation.

Response No. 33, (Source: 42) The 200-275 million ton figure used to identify the estimated total Federal coal reserves in Jackson County was derived from coal resource data supplied by the USGS. This is the most current data available. More intensive future inventories may establish the existence of more or less coal reserves.

Response No. 34, (Source: 46) The RMP was not intended to mitigate site specific impacts because site specific mining impacts are not assessed. Mining impacts and mitigation will be addressed in detail prior to any leasing through site specific environmental assessments and cumulative EISs.

Response No. 35, (Source: 46 and 52) The RMP is not designed to justify coal leasing. Coal leasing is Department of Interior policy which was addressed in the Federal Coal Management Program EIS. The acreage figures provided in the different alternatives are not leasing alternatives or leasing levels. They are acreages available for consideration for leasing. Leasing levels and leasing alternatives will be determined during the coal activity planning phase. The activity planning phase will follow completion of the RMP. A potential coal lease sale is scheduled to include Jackson County in the third round of leasing in the Green River-Hams Fork Coal Region. Further information on schedules can be obtained by contacting BLM.

Response No. 36, (Source: 46) The Bureau applied the coal unsuitability criteria as defined in the coal regulations (43 CFR 3641). The necessary consultation coordination procedures with other Federal and State agencies were part of the process. Using the best available current data, areas unsuitable for leasing for surface mining were identified. When site specific coal lease tracts are identified, more detailed site inventory and analysis will take place to determine leasing exclusions, limits and mitigation.

Response No. 37, (Source: 46 and 52) The acreage levels 13,000 to 107,000 acres are not leasing target acreages. They represent a base from which future site specific tracts can be located for leasing. The 107,000 acres identified in the Economic Benefit Alternative provide all the Federal coal lands after application of the unsuitability criteria as the base from which to select tracts for leasing. The 13,000 acres identified in several alternatives is the minimum base necessary to allow for the continued operation of the existing mines.

The 45,000 acres identified as priority for coal in the Proposed Plan provides sufficient lands from which specific tracts can be selected for lease to allow for the continued operation of existing mines, plus some expansion of the coal industry in Jackson County. The lands not identified for site specific lease tracts during coal activity planning within the 45,000 acre priority area would be available for other multiple use considerations and managed accordingly.

Response No. 38, (Source: 46 and 52) Federal coal, overlain by private surface, will not be included in a lease sale without evidence of written consent from the qualified surface owner allowing entry and commencement of surface mining operations.

The information gathered during surface owner consultation will be used in developing potential coal lease tracts if ownership has not changed.

The information could influence where the boundaries of a proposed lease tract are drawn.

Response No. 39, (Source: 52) In January 1984, the applicant was notified of the identified mitigation required before a PRLA will be issued. The Proposed Plan identifies 280 acres of the application as suitable for lease, while 160 acres were determined to be unsuitable, based on the application of the unsuitability criteria. Site specific analysis of the PRLA and the unsuitability report are on file in the Kremmling Area Office. The PRLA is being covered in a separate EIS.

Response No. 40, (Source: 52) No set number of landowners or acreage is used for the surface owner consultation process. The regulations allow the field personnel to use their judgement, as they know the particular situation. As indicated in Chapter 3, opposition was scattered throughout the coal area. This opposition accounted for 4,500 acres of the 45,000 identified as priority areas under review for coal in the Proposed Plan. Additional information has been added to Chapter 3 concerning surface owner consent and consultation.

Response No. 41, (Source: 56) In both cases, the analysis is made using the Continuation of Present Management alternative as the base. In order to maintain the present level of production for coal and oil and gas during the next ten years, additional acreages were identified as priority acres for both resources to allow for continued operations.

Response No. 42, (Source: 52) Table 3-2 represents a summary of the application of the unsuitability criteria on Federal coal lands in the McCallum KRCRA, including existing nonproducing leases and the PRLA. A final decision on the application of the unsuitability criteria on existing nonproducing leases will be made at mine plan review stage, prior to any development. The final unsuitability decision on the unleased land will be made with the decision on this RMP. The unsuitability decision for the PRLA will be included in the Northwest Colorado PRLA EIS.

Response No. 43, (Source: 52) In the Energy and Minerals alternative, the development of potential oil and gas reserves would be favored over other resource uses, including the development of coal. Some suitable coal reserves would also be developed with expected environmental impacts identical to those discussed in the Economic Benefit alternative.

Response No. 44, (Source: 52) The paragraph following the comment clarifies that reclamation "success is not guaranteed". Despite a degree of uncertainty in any type of reclamation work, due to limiting environmental factors (rainfall quantity and distribution, etc.), vegetation productivity can be restored and increased to levels above that found prior to mining. Initial vegetation trials on two coal mines in North Park have shown increased vegetation productivity on disturbed range sites, in terms of increases in herbaceous plant (air dry weight) production. A combination of reclamation practices have been used to achieve this result; including slope modification, contour furrowing, mulching, snow fence construction, nurse crop seeding and interseeding both perennial native and introduced species.

Response No. 45, (Source: 60) The lands in question are presently under lease for oil and gas. The priority classification for coal would not restrict exploration or development for oil and gas on these lands. Refer to page 5 of the map addendum that accompanied the draft RMP/EIS, for compatible uses on coal priority areas.

Response No. 46, (Source: 52) Paragraph two of this section contains a level of detail consistent with an RMP style document. More detailed discussion of impact and mitigation is appropriate in mine plan environmental assessment or impact statements.

Response No. 47, (Source: 52) Few observers would agree that surface mining is a management method commonly used to enhance grazing. The statement in question was designed to show that there are appropriate post-mine uses which might be enhanced when reclamation is complete.

The BLM does have studies in progress which show an increase in vegetation production after mining and reclamation in North Park. There are also studies of other areas which support the statement that vegetation production can increase after reclamation. These studies are available in the Craig District Office.

Response No. 48, (Source: 52) Appropriate laws, regulations, and policies were incorporated into the planning criteria used in completing this document. If all resources considered "... the full scope of mitigation, enforcement and monitoring", then this RMP would be many volumes thick and redundant.

Response No. 49, (Source: 52) The comment is noted..

WATER

Response No. 50, (Source: 12) Aquifers are protected through mitigation identified as stipulations on the coal lease. They are detailed in the mine

plan and enforced by the Bureau and the Colorado State Mined Land Reclamation Board.

Response No. 51, (Source: 42) The BLM asserts that public springs and waterholes were reserved for livestock and human consumption by Public Water Reserve 107 of April 17, 1926. When water is necessary for purposes other than livestock and human consumption, the Bureau files with the State of Colorado for appropriative water rights. The BLM also applies to the State for underground storage and upstream flow water rights. The BLM is required by Federal statute to consider all potential land uses when managing the public land resources. We recognize that there are conflicting land uses which require water and that allowing one individual the exclusive right to the entire yield of a water source may exclude another type of resource development. Federal acquisition of water rights will prevent the monopolization of a water source for one particular type of land use or resource development.

Response No. 52, (Source: 53) While *Giardia* is found in the waters of the Colorado Basin, so are many other species of bacteria and micro-organisms. Our statement of good water quality holds for all water (drinking water before treatment) and most all other uses. It is very rare to find potable surface water on wild lands.

Response No. 53, (Source: 59) BLM intends to comply with Colorado Water Law regarding use of water.

Response No. 54, (Source: 61) The management solution will be recommended in a watershed activity plan. The RMP is not the planning level to propose site specific actions.

Response No. 55, (Source: 52) Due to the general nature of an RMP it is not possible to be site-specific in describing impacts. In more specific plans such as activity plans, (e.g.: allotment management plans, habitat management plans, etc.) it is possible to be more analytical in nature.

Response No. 56, (Source: 52) The comment is noted.

LIVESTOCK GRAZING

Response No. 57, (Source: 11) Based on the criteria used to determine forage conditions, (75 percent or more of potential = Satisfactory, and 75 percent or less of potential = Unsatisfactory (Chapter 3, Table 3-7)), it has been determined that 77 percent of the range is currently in unsatisfactory forage condition. However, this does not mean that the entire 77 percent is currently producing far less than 75 percent. Some areas could be and are producing at 60 percent, 65 percent, or 70 percent of their potential.

Range forage conditions and potentials were determined by using the Soil Conservation Service inventory method for determining range conditions.

Response No. 58, (Source: 12) Based on the analysis as presented in the RMP/EIS, range conditions can be improved significantly by implementing the management actions proposed. Benefit/cost analysis will be done on all allotments to determine their economic feasibility prior to implementation. The initial livestock forage allocation and resulting 13 percent reduction is based on sustained yield and multiple use.

Response No. 59, (Source: 26) Reference to vegetation manipulations is made in Chapter 3 under Management Actions. Only pesticides approved by the Environmental Protection Agency will be used and only after an environmental assessment has been completed for the site specific project. The environmental assessment will include consultation with various specialists, both within the BLM and other State and Federal agencies. An employee who has been trained and certified in the use of pesticides will be present on all manipulation projects involving chemical control.

Response No. 60, (Source: 35) The proposed initial livestock forage allocation for the Troublesome area is 698 AUMs. Through intensive range management practices, this area could reach a carrying capacity of 935 AUMsor a 22 percent increase.

Response No. 61, (Source: 36) Preference is given to livestock over wildlife in the *initial* allocation only, and in very few instances did this occur. It should be noted that as a minimum, forage was allocated to support existing big game wildlife populations and in most cases, sufficient forage was available to support long term big game population objectives. Areas where conflicts for available forage did occur will receive priority for intensive management and any increase in forage will be allocated based on multiple use principles.

Bureau personnel are aware of the increase in development resulting in a decrease in big game winter ranges. One of the main objectives of wildlife habitat improvement is to increase the quantity and quality of the forage on these winter ranges.

Response No. 62, (Source: 51) Intensive range management employs management practices which are used to increase range productivity. In many instances, especially on sensitive watersheds, these management practices are used for the primary purpose of controlling erosion by stabilizing erosive

soils. Examples of a few management practices that would be used include:

1. Developing livestock grazing systems for the purpose of improving vegetation cover on sensitive watersheds. An increase in plant density would aid in stabilizing erosive soils.

2. Restricting the use of riparian areas by livestock to protect riparian habitat and to promote stream bank stability. The Kremmling Resource Area is not proposing clearcutting as a technique to increase water yield. Refer to Water Resources Section of the Management Prescription Categories in Chapter 3 for additional management practices and restrictions imposed on uses of the public lands in sensitive watershed areas.

Response No. 63, (Source: 52) An analysis of the No Grazing alternative has been included in the RMP/EIS. Refer to Appendix 5 for a detailed discussion.

Response No. 64, (Source: 52) The alternatives in the Final RMP/EIS have been revised in order to expand the range of alternatives under consideration for livestock grazing.

Response No. 65, (Source: 52) The proposed initial livestock grazing allocation and corresponding reduction shown for the Proposed Plan is not just a paper exercise. Although the proposed initial allocation is similar to the past average actual use, individual allotments in fair-to-poor forage conditions are receiving actual reductions and in many instances these reductions are quite significant from their past usage.

The inventory data not only shows where a reduction in livestock use is necessary, due to unsatisfactory forage conditions, but also indicates allotments where an increase in livestock use might be warranted due to good to excellent forage conditions. These increases are part of the 39,726 AUMs, as displayed in the Proposed Plan, and tend to nullify any actual reduction on the unsatisfactory allotments. In order to equate the actual reduction on the unsatisfactory allotments, take out the increases on the satisfactory allotments and then compare this figure to the past average actual use (39,000 AUMs). By doing this, it will be found that the overall reduction equals 22 percent from the authorized and 9 percent from the actual. Carry this rationale a step further and apply the same procedure to only the Management Level 2 allotments where the majority of management efforts are placed due to current unsatisfactory conditions. Reductions on these allotments would then equate to a 27 percent decrease from the actual use. Although a substantial number of allotments are presently in unsatisfactory condition, it doesn't necessarily mean that forage allocations for these allotments are out of line. Past historical use or current management (period of use, distribution problems, etc.) could be the problem.

Response No. 66, (Source: 52) Appendix 3 displays the initial livestock forage allocation (estimated current carrying capacity), along with the expected long term livestock forage production (estimated long term carrying capacity). By definition, as stated in Table 3-7 (Range Forage Condition), those allotments currently producing less than 75 percent of their potential are in unsatisfactory condition and those producing 75 percent or more are in satisfactory condition. Therefore, analysis of the initial vs. long-term in Appendix 3 provides allotment by allotment forage conditions. Existing "Ecological Range Conditions" for each allotment have been added to the RMP and are shown in Appendix 2.

Specific information on erosion, types of plants, and soils is available at the Kremmling Resource Area Office. This is in accordance with 40 CFR 1502.21 (1982), Incorporation by Reference.

Response No. 67, (Source: 52) Allotment specific range improvements have been added to the RMP/EIS and are contained in Appendix 4. Within 5 months after the final RMP/EIS is published, a Rangeland Program Summary (RPS) will be issued which will describe in detail site specific actions that will be used for all allotments. The RPS will contain an Allotment Management Plan implementation schedule. Allotment Management Plans are the tool by which intensive grazing management is implemented and contain additional site specific information on range improvements, benefits, costs, range conditins, etc. Each specific rangeland improvement project proposed in the AMP will be analyzed through the Bureau's environmental assessment procedures. Interested parties may request copies of individual decision on implementing Allotment Management Plans, and adversely affected parties may protest and appeal the grazing decisions.

Response No. 68, (Source: 52) The Bureau's rangeland improvement program is supported primarily by the range betterment funds, which consist of 50 percent of all fees collected by the United States in return for domestic livestock grazing on the public lands. These funds are distributed to the Districts in proportion to the amount of grazing fees collected by each District. State Directors do have limited discretion in redistributing funds annually, but the amount received by any District Office during a 5-year period must equal that District's full entitlement for that period. The Craig District has been receiving between $200,000 and $250,000 annually through this appropriation. The RMP is calling for $1,055,000 in total costs (current dollars)

to implement the grazing program over a ten-year period, with an average expenditure of $105,500 year. Permittees and lesses are also encouraged to contribute labor, equipment and/or cash towards range improvements and have indicated their willingness to do so.

Any activity plan is subject to funding. The RMP does, however, assign management priorities among grazing allotments upon which management decisions can be made, once funding is available.

Response No. 69, (Source: A) The primary purpose for vegetation manipulation in the area is to control undesirable brush species for the purpose of increasing desirable forage species. Increase in water yield could possibly be a secondary benefit, but is not the intent of the manipulation.

Response No. 70, (Source: 52) The impact analysis presented in Chapter 4 concerning Range Improvement Practices indicates that these practices would have insignificant adverse impacts as this activity would be widely scattered over a large geographical area. BLM policy, mandates and statutes require that site specific environment assessments be completed for each range improvement at the activity planning stage. This need for future environmental analysis is documented in Appendix 1, Appendix 2, and in the Livestock Grazing portion of the Management Prescription Categories Section of Chapter 3.

Only pesticides approved by the Environmental Protection Agency will be used and again only after an environmental assessment has been completed for the site specific project.

Response No. 71, (Source: 52) The term "vegetation manipulation" is defined in the glossary of the RMP/EIS. Allotment Specific Range Improvements have been added to the Final RMP/EIS and are shown in Appendix 4. Analysis of this Appendix will show, by allotment, proposed methods of vegetation manipulation to be used.

Response No. 72, (Source: 52) Data pertaining to Proposed Range Improvements by allotment and alternative have been added to the RMP/EIS. Please refer to Appendix 4 for specific types and amounts of vegetation manipulations.

Response No. 73, (Source: 52) Refer to response Number 44 and 47.

FOREST PRODUCTS

Response No. 74, (Source: 35) Forest management activities are suitable on the south and west borders of the WSA, as stated in Chapter 3. Harvesting activities that would cause unacceptable damage to the watershed are not permitted and consequently these lands will not be intensively managed. The lands which can be intensively managed are only inaccessible because there is no legal access; not because the terrain, which is gentle, precludes road construction.

Response No. 75, (Source: 36) The sustained yield (allowable cut) is figured for a ten year period, with an average annual harvest as described in Chapter 3. During the years of 1981 and 1982, the BLM sold 5.7 MMBF and 3.9 MMBF respectively. Thus, for the period of 1975 to 1982, the average annual volume sold is 4.8 MMBF; but, the actual yearly totals ranged from 0 MMBF to 9.7 MMBF.

Response No. 76, (Source: 51) Louisiana-Pacific has recently purchased the sawmills within the resource area and are building a larger sawmill and a waferboard plant in Kremmling. Even though the demand is very high, the amount offered for sale will not exceed the sustained yield level. There is also a tremendous demand for firewood and trees for log homes, which is competing with the lumber industry for the same volume.

Response No. 77, (Source: 52) The text has been revised.

Response No. 78, (Source: 52) Withdrawn lands (limited management as described in Chapter 3) are those where forest management activities will not be planned. The initial forest inventories determine which lands are, or are not, capable of sustained commercial timber production. It just happened that in many instances, land which could be withdrawn from intensive forest management to protect another resource has already been withdrawn by forest classification criteria.

For instance, the 5,000 acres of forest within the Upper Colorado River SRMA have been withdrawn from intensive forest management practices, not because of the recreation status, but because the area had already been withdrawn because it can only produce non-commercial species. Also, when harvesting on fragile areas would reduce the site's productivity, they are withdrawn for forestry reasons. However, these same areas often coincide with a "sensitive watershed".

WILDLIFE

Response No. 79, (Source: 20) The 240 acre tract located in Section 9 is contiguous to a much larger tract of public land also identified as important wildlife habitat. This tract, as well as BLM and Forest Service lands east of the Fraser River, will act as buffers between the private developments

and the large tract of public land identified as priority wildlife habitat.

Response No. 80, (Source: 26) The 760 acre tract of public land located in T1N, R76W, Section 5, 8, 17, and 20 have been identified for exchange and sale, as this tract is surrounded by private land. The exchange process will be utilized to obtain private lands equal in resource value; in this case, wildlife habitat, to the public lands exchanged. The sale will support or enhance the tourism and recreational based economy in the Grand Lake, Granby and Fraser areas.

Because of the extensive development proposed by land owners adjacent to this tract, continued big game use of the public land is doubtful. The exchange and sale process can be used to further "block up" public land that can support wildlife displaced by development in this area. The sale categorization can be alleviated by the retention of large blocks of public lands east of the Fraser River and adjacent Forest Service lands for a buffer and for habitat.

Response No. 81, (Source: 26) The interpretation that "if the forage drops below the maintenance level for both livestock and big game, forage for big game will be allowed up to the 1980 population and livestock forage would be cut back accordingly" is correct. However, once intensive management is implemented and the objective of increased forage is obtained, this additional forage would again be allocated, based on the principle of sustained yield and multiple use. Big game would receive a proportional allocation.

Response No. 82, (Source: 26) The forage allocation process conducted in 1980 indicated few forage conflicts between big game and livestock. For the most part, sufficient forage was available to support both the Colorado Division of Wildlife objective big game populations and the 1980 population livestock numbers. Forage was allocated for the 1980 big game population levels as a minimum and for DOW's long term levels where conflicts with livestock for forage did not occur. The public lands without sufficient forage available to support both the 1980 livestock levels and the DOW's long-term big game objectives will receive management priority to increase forage production.

Response No. 83, (Source: 41) To date, BLM has not observed or been notified of conflicts between snowmobiles and big game. If these conflicts occur in the future, BLM will coordinate with the Colorado Division of Wildlife to establish specific snowmobile trails away from big game winter concentration areas.

Response No. 84, (Source: 41) The lands will be managed for wildlife as the priority resource. These lands are basically scattered tracts that would have been identified for disposal. These lands provide important wildlife habitat values, ranging from big game winter range to riparian habitat and raptor nest sites. Even though these lands may not be intensively managed, BLM can continue providing the existing wildlife habitat values if these lands are retained in public ownership.

The big game critical areas mentioned (Gunsite Pass, Antelope Pass, etc.) will be priority areas for management. Although these areas were identified as priority areas for livestock management, our forage allocation process indicated virtually no forage conflict between big game and livestock. BLM recognizes the importance of the big game areas and will assure the continued compatibility of livestock, as well as other potential conflicting resources with big game.

Response No. 85, (Source: 41) BLM has an existing Memorandum of Understanding with the Colorado Division of Wildlife addressing the management of public lands on Junction Butte. The RMP will identify some of these lands for exchange to the Division. Other public lands adjacent to Division lands on Junction Butte will be cooperatively managed in accordance with the Memorandum of Understanding. (Refer to Ownership Consolidation Map.)

Response No. 86, (Source: 42) The uncommitted mitigation measures (habitat improvement techniques) are proven techniques. Habitat improvement will only be required when necessary as a mitigation measure.

Response No. 87, (Source: 42) Undisturbed buffer zones adjacent to mining operations, regardless of the open-pit size, are necessary to minimize impacts to wildlife. BLM intends to assure the protection of wildlife habitat values in local development areas. Mitigation measures necessary to minimize impacts of surface mining will be developed and coordinated with the operators and other regulatory agencies.

Response No. 88, (Source: 42) The "restoration of post-mining lands to equal or better than pre-mine conditions within a few years" does not necessarily apply to wildlife habitat values. Past experience has indicated that while post-mining vegetative production may exceed pre-mining conditions on a given tract, other vegetative conditions, such as structure, variety of vegetative species available, etc., may take longer than 10 years to achieve. Wildlife habitat values normally consist of more than vegetative production on a post-mined area. Continually improving reclamation technology can be applied to areas such as North Park.

Response No. 89, (Source: 42) Since all public land in the Resource Area supports wildlife, at least at the local level, loss of wildlife habitat is an adverse impact regardless of the specific area being developed. The extent and timing of mineral development will determine the impacts on wildlife production and populations in the development area. Mitigation measures such as those listed in Chapter 4 will minimize the adverse impacts to wildlife habitat.

Response No. 90, (Source: 48) The Kremmling Resource Area has not received reports of snowmobile and big game conlicts in the Wolford Mountain/Antelope Pass area. If conflicts are documented, the KRA can take management measures to resolve them. Snowmobile trails, closed areas, etc., can be established to resolve big game and snowmobile conflicts.

Response No. 91, (Source: 48) This information will be added to inventory records.

Response No. 92, (Source: 48) BLM firewood cutting areas are relatively small in size, compared to the habitat available during the potential conflict season. Most areas will be open from July 1 until the snow prohibits access, except that some sites will be closed on August 30 to prevent concurrent cutting and hunting.

Very little firewood cutting has been noticed on BLM lands in North Park, and consequently, cutting areas have not been designated. If individual usage increases, then designated areas will be developed.

Firewood cutting permits are required throughout the resource area, which will give better accounting of usage by cutting areas.

Response No. 93, (Source: 48) The Bureau recognizes the potential for adverse impacts to wildlife species, particularly sage grouse and mule deer, dependent on the sagebrush ecosystem. Sagebrush eradication projects will be designed to improve wildlife habitat, or at least to minimize adverse impacts to species dependent on this habitat type. All sagebrush eradication projects on public lands in the Kremmling Resource Area will be conducted in consultation with the Colorado Division of Wildlife.

Response No. 94, (Source: 52) The Troublesome Wilderness Study Area provides important habitat for elk, as well as numerous other wildlife species. The limited extent of development which could occur in the Troublesome WSA, if not designated as wilderness, should not adversely impact the Troublesome elk herd or the Middle Park elk population. Mitigation measures and post development management would be directed to maintaining or improving wildlife habitat values provided by the Troublesome WSA.

Response No. 95, (Source: 52) The intensive management discussed for wildlife habitat does not contradict the low priority given to wildlife in the RMP. The BLM is aware of the public land habitat values in the Kremmling Resource Area though wildlife was prioritized below the commodity resoures such as livestock, minerals, and forestry. Public land habitat management is, in fact, occurring throughout the Kremmling Resource Area, particularly in North Park. Numerous wildlife habitat improvement projects have been implemented in North Park. Habitat improvement projects are currently in the planning stage for Middle Park and the Upper Colorado River.

Public land wildlife habitat has been compatible with the commodity resources in the past and is expected to remain so in the future. This compatibility is evident in the continuing dependence of wildlife species on public land habitat, and the current population levels of these species.

BLM recognizes the potential of cumulative impacts of commercial land uses, particularly mineral development, on public land habitat. Cumulative impacts on wildlife are speculative to address because parameters, such as timing, extent, and location of development are unknown at this time.

The habitat reductions in Chapter 3 should have been emphasized as occurring on private lands within the KRA. The developments listed, (i.e., subdivisions, access roads, recreational facilities) are occurring in the winter recreation areas in Middle Park. Mineral development on public land is occurring in North Park; but on a relatively small scale. No where in the RMP/EIS has BLM stated public land habitat is in a declining trend. On a Resource Area-wide basis, population levels for wildlife species identified priority for management by the Colorado Division of Wildlife are increasing.

The discussion of wildlife habitat/forest management was one *example* of some of the potential benefits or conflicts which could occur in multiple use land management. This same type of situation where the potential of conflict or benefit between wildlife and any of the resources managed by BLM, can occur.

Response No. 96, (Source: 53) A total of 160 miles of riparian habitat exists in the Kremmling Resource Area. The 3 miles of riparian habitat listed in the Proposed Plan of Chapter 3 would receive management priority because of the poor condition of that area.

Response No. 97, (Source: 53) Critical big game winter range will be managed to support populations consistent with the Colorado Division of Wildlife objectives. Close coordination with the range management program to assure compatibility be-

tween livestock and big game forage requirements will be used as a management tool. Other techniques planned for winter ranges include reseeding, fertilization, water development, and vegetation manipulation, depending on management objectives. Prescribed burns also will be utilized to improve forage production where feasible.

Response No. 98, (Source: 58) All riparian zones will be intensively managed. The three miles listed in the RMP Preferred Alternative will receive management priority because of the poor condition of this area.

Response No. 99, (Source: 58) Important habitats for wildlife species, including sage grouse will be excluded from sagebrush eradication. These habitats will include big game winter concentration areas, riparian habitats, etc. Sagebrush eradication projects will be designed to compliment wildlife habitat values.

Response No. 100, (Source: 58) Mitigation measures are listed in the Wildlife Section of Chapter 4. The location and timing of mitigating measures will depend on the location and timing of impacts adversely impacting wildlife habitat. The mitigation measures listed in Chapter 4 as well as State and Federal regulations will minimize adverse impacts to wildlife habitat.

Response No. 101, (Source: 58) "Riparian" is an accepted BLM term. However, wetlands in the Resource Area will eventually be classified according to the Cowardin system.

Response No. 102, (Source: 52) Sagebrush habitats identified as important to wildlife species such as sage grouse and antelope will not be "eradicated". "Sagebrush eradication" is a poor term; no where on public land in the Kremmling Resource Area has sagebrush been "eradicated". Sagebrush structure and density can be manipulated to improve wildlife habitat conditions within the sagebrush ecosystem. Areas where sagebrush is providing important habitat values in its existing conditions will not be manipulated.

Response No. 103, (Source: 52) The text has been revised.

THREATENED AND ENDANGERED SPECIES

Response No. 104, (Source: 38) BLM policy states that sensitive plant species, as well as animal species, are given consideration equal to the threatened or endangered species. Therefore, sensitive plants and animals are included in the Wildlife and Threatened/Endangered Plants and Animals section in Chapter 4.

Response No. 105, (Source: 38) A special habitat management plan will not be included in the RMP. However, an activity plan for the area will be developed at a later date.

Response No. 106, (Source: 38, 47 and 51) The North Park *Phacelia* site designation has been changed from an ACEC to a Research Natural Area (RNA) in the Proposed Plan.

Response No. 107, (Source: 57) The Bureau will cooperate with the Colorado Natural Heritage Inventory in gathering field data and establishing management objectives for plant associations.

Response No. 108, (Source: 58) The Bureau complies with Section 7 (c) of the Endangered Species Act and will coordinate all actions which could impact endangered species or their habitats, with the USFWS.

Response No. 109, (Source: 58) The Bureau complies with Section 7 (c) of the Endangered Species Act.

Response No. 110, (Source: 58) Golden eagle and prairie falcon nest sites and adjacent habitats examined during the coal unsuitability criteria application process included public lands outside the McCallum KRCRA, private lands, and other lands not managed by BLM. Some of the eagle and falcon habitats examined in the field and determined unsuitable for surface mining fell into these land categories. These lands could not be designated unsuitable by BLM. The acreages listed unsuitable therefore, include only BLM-managed public lands within the McCallum KRCRA.

Response No. 111, (Source: A) ACEC identifies an area as important with no particular management prescription. Management of an ACEC is at the discretion of the BLM Area Manager. A Research Natural Area (RNA) also identifies an area as important, but management is more specific. The BLM Area Manager has management discretion, however, RNA's are managed primarily for research and educational purposes.

RECREATION

Response No. 112, (Source: 12) The proposed Azure Project would be compatible with the objectives of the Proposed Plan, provided the floatboating opportunities were maintained (both in terms of quality and quantity) below the project area, including Little Gore Canyon. At the time the DEIS was written, BLM did not have a specific proposal for

the Azure project. The RMP establishes certain conditions for mitigating major impacts from the project. However, BLM will comment further on the project once the final details are developed. The RMP is not designed to analyze site-specific proposals in detail. A separate EIS on the project will be prepared by the Federal Energy Regulatory Commission.

Response No. 113, (Source: 12) BLM is attempting to obtain public access to the North Sand Hills because none presently exists. The current informa arrangement with the adjoining private landowner can be terminated at any time, resulting in no access to the area.

Response No. 114, (Source: 13) The commentor is referred to the Visual Resources Section in Chapter 4 for the discussion of why this conclusion was reached.

Response No. 115, (Source: 13) BLM can and does file for water rights in conjunction with developed recreation sites. There are no developed sites within the resource area where water rights are required.

Response No. 116, (Source: 13 and 55) The ORV designation regulations require that all public lands be placed in one of three categories: open, limited, or closed. "Open" is a misnomer, (the use of this term is required by regulation), as we are not opening the lands or encourging ORV use. What "open" really means is that there is currently little motorized use in these areas and there are no problems resulting from ORV use, nor is any expected to occur in the foreseeable future. BLM has the authority to impose restrictions in these "open" areas if ORV use becomes a problem.

Response No. 117, (Source: 26) BLM currently signs access points where significant recreation opportunities exist. However, it is often difficult to determine the exact location of public land boundaries without costly surveys. Areas to be surveyed must be prioritized.

Access is usually acquired in conjunction with resource programs such as forestry. It is general policy to have access roads open to public use, but there are a few instances where administrative access is all that can be obtained or is desirable.

Response No. 118, (Source: 26) This restriction is proposed because of public safety considerations. Several low clearance vehicles have attempted to travel this road, became stuck and required towing. If we were to follow the commentor's suggestion throughout the Resource Area, we would have to either improve most of the BLM roads in the area or close most of them. The first option is prohibitively expensive and the second option would be unacceptable to the public.

Response No. 119, (Source: 12, 35, 44, and 55) The change in designation is a change in name only and was made to more accurately reflect existing and proposed continued management. The existing restrictions will remain intact and can be increased if conditions warrant. The experience of the last several years has demonstrated that ORV use, subject to certain restrictions, is compatible with management for natural and cultural values on this particular area.

Response No. 120, (Source: 47) A management plan for the Upper Colorado River was completed in 1982 and is available for review at the Kremmling Office. A management plan for the North Sand Hills, identifying specific management steps and budget requirements will be prepared following completion of the RMP process, as funding allows.

Response No. 121, (Source: 50) The definition of an ORV is contained in the Glossary. This definition comes from the initiating Presidential Executive Orders, 11644 and 11989 and the Federal regulations on ORV designations. We recognize the problems stemming from the use of "off-road"; however, we are required to use the terminology. The concern over this is noted.

Response No. 122, (Source: 50) Comment is noted. The Colorado SCORP was consulted during the planning process, although specific reference to it was omitted from the draft plan. Budgeting is separate from the land-use planning process, but the needs identified in the SCORP will be referenced in future budgeting. The RMP is consistent with the SCORP.

Response No. 123, (Source: 50) The description of the types of limitations and general locations are presented in Appendix 7. Specific sub-locations will be identified when the ORV designation implementation plan is prepared in in 1985. The primary purpose of ORV designations is resource protection and not the provision of ORV opportunities. However, the proposed ORV designations would not significantly limit opportunities for motorized recreation in the Kremmling Resource Area. It should be noted that no comments concerning the specific areas identified in the plan were received.

Response No. 124, (Source: 52) We believe this concern has been adequately addressed in the Visual Resources Section of Chapter 4.

Response No. 125, (Source: 51) Under current Bureau policy, management actions in Extensive Recreation Management Areas are limited to providing information (maps and signs) and access. Use will be monitored through use of traffic counters and observations by BLM field personnel. If use increases to the point where more intensive

management actions are required, additional funding will be requested.

Response No. 126, (Source: 52) Outside of the Upper Colorado River corridor, the public lands in the Kremmling Resource Area receive a very small portion of the total recreation use in the region. However, it is recognized that they will become more important, especially in Middle Park, as adjoining National Forest lands become overcrowded. Under the Proposed Plan, the recreation opportunities on the public lands will essentially be maintained and even increased in those instances where public access is obtained to areas where none presently exists.

Response No. 127, (Source: 52) The reason that many of the potential SRMA's were identified as having significant recreation values and use is because these areas have been opened up (i.e., public access and roads) as a result of forest management practices. The clearcuts in these areas do not encompass the entire area---far from it---and people recreate throughout the areas that are intensively managed for timber. No significant recreational values are being sacrificed under the Proposed Plan, rather, they are generally being maintained and even enhanced in those areas where public access will be provided were none presently exists.

Response No. 128, (Source: 56) The inclusion of the Upper Colorado River on the Nationwide Rivers Inventory is noted. Chapter 4 adequately describes the environmental consequences of the alternatives of these values.

Response NO. 129, (Source: 56) Each of the alternatives is a complete multiple-use plan even though certain resources may be emphasized. In the Energy and Minerals alternative, there were no higher priorities identified for the Troublesome area, so it was identified as a potential SRMA. The reason SRMAs have been identified is to recognize recreation as a principal management objective in response to existing or projected increases in demand for specfici types of recreation in the future. This would allow BLM to make major investments in both facilities and visitor assistance in these areas to deal with increases in demand and use. However, most of the recreation values and uses in the potential SRMA's identified in the Recreation alternative are compatible with the priority uses shown in other alternatives and would not be affected by these management emphases.

Response No. 130, (Source: 56) Under the Proposed Plan, the 6,000 acre core of the WSA would be managed for livestock grazing and compatible uses (i.e., recreation and wildlife). This essentially represents maintenance of the existing situation, so that primitive and backcountry recreation opportunities are expected to remain unchanged.

Response No. 131, (Source: 52) Development of energy resources are not emphasized under the Recreation or Natural Environment Alternatives. No significant conflicts between what energy development would occur under these two alternatives and recreation were identified. In addition, in the Kremmling Resource Area, energy development and prime recreation resources are generally not in the same areas.

Response No. 132, (Source: 52) The term "public lands" as used in this document refers to land managed by BLM. Public lands administered by the U.S. Forest Service are commonly referred to as "national forest" lands.

Response No. 133, (Source: 52) The text has been revised.

WILDERNESS

Response No. 134, (Source: 12) Neither the private inholding nor the lack of access were used as reasons for recommending the Troublesome WSA as nonsuitable for wilderness designation. They were described to give the reader an understanding of the current status of the area.

The lack of special values that would benefit from wilderness management is just one of several factors evaluated in making the suitability recommendation. Taken cumulatively, the Troublesome WSA was felt not to be a quality or suitable addition to the National Wilderness Preservation System.

Response No. 135, (Source: 19 and 55) Wilderness is viewed as one of the several multiple-uses that can be managed on the public lands and is evaluated in that context. For the Troublesome WSA there were only two alternatives that needed to be analyzed in detail--No Wilderness and All Wilderness. In order to fit the RMP format, these two alternatives were incorporated into the alternatives developed for the RMP.

As described in Appendix 6, there are several factors to be considered when evaluating whether a WSA would be a quality or suitable addition to the National Wilderness Preservation System (NWPS). Each factor considered individually may not lead to the conclusion that the WSA is nonsuitable, but taken cumulatively, the area may be determined to be nonsuitable. This is the case for the Troublesome WSA. It is BLM's conclusion that the Troublesome WSA considered by itself is not a quality addition to the NWPS. There is no guarantee that the

adjoining National Forest lands will remain in their current primitive condition. In addition, the owners of the private inholding have indicated no interest in selling or exchanging their property.

Response No. 136, (Source: 38 and 47) The Bureau can consider wilderness at any time in its land use planning process (Pursuant to Sec. 202 of FLPMA). BLM would consider a joint study with the U.S. Forest Service if they reevaluate the adjoining National Forest lands for wilderness in a future land use plan. In the meantime, the 6,000 acre core of the BLM WSA between Rabbit Ears and Troublesome Creeks is expected to remain essentially unchanged under management proposed by the Proposed Plan.

Response No. 137, (Source: 44) The private land has been developed as a primitive retreat by the owners, and we have received no indication that they would be interested in a land exchange.

Response No. 138, (Source: 44) The conclusion drawn by the commentor is not necessarily the case when evaluated in a regional context. Due primarily to its small size and the availability of wilderness opportunities elsewhere in the region, designation of the WSA would have a negligible effect on the local economy. The area would still be available for recreation (mostly primitive opportunities) under the Proposed Plan.

Response No. 139, (Source: 51 and 55) The BLM Wilderness Study Policy specifically requires an analysis of the regional supply of existing and proposed wilderness areas (See Appendix 3 - diversity criteria) as one of several factors to be considered in determining the suitability of a WSA. That is the reason it is highlighted in the wilderness discussion. Regional supply is considered for other resources (recreation, range, timber, etc.) but is not a specific evaluation criteria, as it is in the wilderness program.

Response No. 140, (Source: 51) The BLM Wilderness Study Policy requires an evaluation of multiple resource values that would benefit from wilderness designation, along with several other factors. The Study Policy does not require, or even imply, that wilderness designation should be recommended simply to achieve that goal. The wilderness suitability recommendation is based on several factors and a cumulative assessment is made on whether the WSA is suitable for wilderness designation.

Response No. 141, (Source: 51 and 55) In its evaluation of wilderness suitability, BLM must consider the fact that the much larger adjoining National Forest lands were found to be nonsuitable for wilderness. This is one of several reasons, when taken cumulatively, that led BLM to conclude that the Troublesome WSA is not suitable for wilderness designation. Should the U.S. Forest Service ever reevaluate their lands for wilderness, BLM can concurrently reevaluate the wilderness potential of adjoining public lands.

Response No. 142, (Source: 51) Areas not designated wilderness by Congress are available for other forms of multiple-use management. Protection of wilderness characteristics is not required, although standard environmental protection measures are still in effect. Management under the Proposed Plan would not alter the wilderness characteristics on most of the area (i.e., the 6,000 acre core between Rabbit Ears and Troublesome Creeks).

Response No. 143, (Source: 51) The Baily-Kuchler system was selected because it is a land classification system which facilitates planning at the national level and provided a broad synthesis of current knowledge about the ecosystem geography of the country. It also serves as a useful reference for those who desire an overview on a comparable basis of ecosystem and landform representation in existing and potential NWPS units. BLM is not aware of any "unique" topographic or vegetative features which give the WSA special significance and no additional information was provided during the public comment period.

Response No. 144, (Source: 51) None of these species are listed as rare, sensitive, threatened, or endangered plant species. They are found throughout the northern mountains of Colorado.

Response No. 145, (Source: 52) The relatively small size of the WSA is only one of several reasons why the Troublesome WSA is not considered to be a quality or suitable addition to the National Wilderness Preservation System. This WSA's capability to help take the pressure off existing wilderness areas is extremely limited. As discussed in the economic and social sections, the economic and social benefits that would result from wilderness designation are negligible. The primitive recreation opportunities will remain largely intact under the proposed management for the area.

Response No. 146, (Source: 52) None of the values are dependent upon wilderness management; although it is recognized that they could benefit from such management. The Bureau has other means available to provide for protection and management of environmental values which do not relate specifically to wilderness characteristics. Management of these values is part of BLM's ongoing land use planning and multiple-use resource management program.

Conflict with other resource values is only one of several factors to be considered when evaluating a WSA's suitability for wilderness. The quality of the

WSA as wilderness must also be evaluated. The cumulative reasons why BLM does not believe the Troublesome WSA to be a quality or suitable wilderness are discussed in Chapter 3.

BLM does not give or "set aside" money to the timber sale purchaser for road construction nor does it have "negative value" sales. Thus, the timber value exceeds road construction costs. The costs of forest roads should also be viewed in terms of providing long term access to public lands for other uses, primarily recreation. Forest harvesting does not necessarily degrade recreational, scenic, wildlife, or watershed values and these values can often be enhanced.

Response No. 147, (Source: 56) The statement on page 156 of the DEIS (Chapter 4 - Locatable Minerals) as intended to convey that any unknown mineral potential would be lost as a result of wilderness designation. Based on existing data, the mineral development potential of the area is low and the impact from designation is not considered to be significant.

Response No. 148, (Source: 56) Each WSA must be evaluated on its merits, based on the planning criteria in Appendix 3. Simply because there is increasing demand for, and pressure on recreation resources, including wilderness areas, does not mean that the Troublesome WSA is suitable for wilderness designation. After evaluating the opportunities provided by the WSA and the regional supply of existing and potential wilderness areas, it is felt that the Troublesome would not be a significant addition to the National Wilderness Preservation System. The WSA would still provide recreation opportunities, including primitive opportunities, under the proposed non-wilderness management.

CULTURAL RESOURCES

Response No. 149, (Source: 12) Areas indicated for "motorized traffic closures" are the higher concentration areas which would have the greatest chance of impacting cultural remains. Travel throughout lesser impact areas would have corresponding lesser impacts. Travel restrictions were based on observed impacts of areas containing identified resources. Further restricted area designations could not be made based on existing resource data.

The "high adverse" impacts referred to are a potential estimate, based on the potential variety and magnitude of various development practices. All protective legislation will continue to be implemented and affords all cultural remains adequate (i.e., legal) consideration. Authorized development itself is directly constrained by such protective legislation.

Response No. 150, (Source: 38) The Bureau recognizes the existence, significance, and management potential of this site. In the Proposed Plan the Bureau proposes to designate this site as a Research Natural Area. A detailed description of specific management within the RMP is inappropriate in relation to the level of detail afforded to other related resources. Bureau regulations, as well as those of the State and U.S. Fish and Wildlife Service, will be taken into account in a separate management plan for this site to be written in the future.

Response No. 151, (Source: 41) Protection of cultural sites is contingent on the degree of their significance, degree and nature of threat and availability of funds. The transportation plan and ORV designations to be developed in the future will analyze road closures or restrictions, based on adverse impacts to any resource. The referenced site will be evaluated, in conjunction with these plans or any future projects which may impact it.

Response No. 152, (Source: 44) The SRMA designation and management plan will include and specifically provide for the protection, continuing inventory and perhaps even further research for cultural remains in the North Sand Hills area. This designation does not impose fewer restrictions, but allows for further formal analysis of the area which will include protection and enhancement of cultural remains in this area.

Response No. 153, (Source: 52) Developmental uses are compatible with cultural sites within the accepted limits of current laws and regulations with which the Bureau will comply. 36 CFR 800 and Section 106 of the Historic Preservation Act require BLM to continue to fully consider cultural resources in all plans and activities.

Response No. 154, (Source: 52) The disposition of cultural resources through modern salvage or scientific techniques is a legal and acceptable practice. To leave cultural remains in the ground until newer and better techniques can be developed is a detriment to the resource itself especially if it is a significant resource requiring evaluation, as this practice impedes the data collection which is necessary for the evaluation. As salvage excavation practice is legal and acceptable now, any delays would also impede multiple-use resource management and resource development.

Response No. 155, (Source: 56) Each management alternative proposes specific areas of development. The emhasis of the Natural Environment alternative calls for increased levels of pure research and cultural resource enhancement and the

largest acreage figure reflects this. Acreage figures from the Energy and Minerals alternative reflect surveys required in the intensive mineral areas in North Park. No outside Bureau-funded contract survey is indicated in the Renewable Resources alternative, as all projects implemented under this alternative would be surveyed by Bureau archaeologist because these are Bureau-initiated range, wildlife, watershed, and forestry projects. No significant degradation takes into account current laws and regulations. As most projects in the Renewable Resources alternative are Bureau initiated and Bureau-designed, the primary mitigative measure is avoidance. Compliance with 36 CFR 800 and Section 106 is required. Specific inventories and mitigation for specific projects will take place prior to project approval and implementation. Overall inventory needs are indeed based on the potential number of acres proposed for surface impacting (and necessarily cultural resource impacting) projects. Inventory priorities are based on budget priorities and to a large extent on management priorities, which would directly fund inventories for resources affected by their development, as has happened previously.

Response No. 156, (Source: 56) Intensive management for cultural remains is directly tied into standard compliance and mitigation measures which would occur more frequently, due to more surface disturbing activities in the Energy and Minerals and the Economic Benefit alternatives. The variation in acreage figures is based on different management emphases impacting different areas and acreages. While management strategies do change, the consideration of cultural remains continues within the constraints of current laws and regulations. The more intensive the resource management the more potential impacts to cultural remains and a correspondingly higher level of cultural resource management.

Response No. 157, (Source: 56) The number of sites indicated on Table 3-28 refers to a potential number of eligible sites which may occur in areas which are identified due to compliance with cultural resources laws. Developmental vs. environmental emphasis under the alternatives would generate corresponding levels of cultural resource management. Certain numbers of sites would be identified in respective development areas and a portion of these finds could potentially be eligible. These numbers are based on professional judgment, extrapolation from existing data bases, and informant information.

Additionally, the Advisory Council on Historic Preservation (ACHP) was afforded the opportunity to comment on the draft RMP/EIS, and will be afforded the opportunity to review and comment on the Final RMP/EIS. The RMP/EIS suggests management alternatives which in and of themselves do not constitute the basis for formal determinations of effect, adverse or otherwise. As the plan does not formally propose specific impacting actions, but merely management alternatives, and as no formal determinations of effect were sought for the RMP/EIS process, this office has not sought formal concurrence from the State Historic Preservation Officer or the ACHP. Compliance with 36 CFR 800 and Section 106 will be entered into when actual impacts and effects are determined for significant cultural remains.

Response No. 158, (Source: 52) "Significant cultural resources", along with all other identified cultural remains, will be afforded their required consideration and protection under existing laws, policy, regulations and guidance under each of the alternatives. These constraints, realized under effective mitigation, if needed, would alleviate significant impacts to these resources. Impacts described under the Natural Environment Alternative are less disruptive of the ground surface, so they are also potentially less likely to disturb cultural remains.

Response No. 159, (Source: 52) "BLM's assumed roles" refers to the responsibilities of the Bureau as specified by law, regulation, policy and guidance.

Response No. 160, (Source: 52) "Project parameters" are the physical lay-out of a project or undertaking, which includes direct environmental impacts. Current laws and regulations provide for consideration of cultural remains which could be adversely impacted by an undertaking, whether there are "feasible and prudent alternatives to avoid the adverse effects" on significant cultural remains or not (National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR VIII 800.6 (4),(5) and (8)).

LANDS AND REALTY

Response No. 161, (Source: 26, 47, 51 & 58) Disposal criteria are identified in the Lands and Realty Section under Ownership Consolidation and are the same in the draft as the Proposed Plan. Maps or lists of legal descriptions were made available at public meetings and hearings, in BLM offices involved with the plan, the State of Colorado Clearinghouse, and affected counties. A map, entitled Ownership Consolidation-Land Tenure, depicting disposal parcels and specific categories is included in the Proposed Plan. Appendix 9: Ownership Consolidation: Deletions From Draft RMP/EIS Disposal Areas; Appendix 10: Ownership Consolidation: Additions or Changes From Draft RMP/EIS

Disposal Areas and Appendix 11: Ptarmigan Small Tract Area are also included in the Proposed Plan. The Bureau feels that all identified disposal parcels meet the criteria of the Proposed Plan and Environmental Impact Statement. These identified lands are categorized as follows:

Category I: Public lands suitable for retention in public ownership and needed for multiple-use management which will not be considered for sale.

Category I - Special Exceptions: Category I lands are described above. Adjustments that are in the public interest and would benefit Federal or other governmental agencies' management programs would be considered. Exchanges, boundary adjustments, Recreation and Public Purposes leases, and Section 302 leases are such exceptions.

Category I - State Indemnity Selection Parcels: The Colorado State Board of Land Commissioners has selected lands to satisfy their entitlement under Section 7 of the Statehood Act of March 3, 1875.

Category II: Public lands which will be considered for sale. Lands offered for sale for 2 years may then be considered for other types of disposal, including exchanges or public purposes disposal actions.

Response No. 162, (Source: 1) The referenced land has been identified as Category II: Public lands which will be considered for sale. Your expression of interest in this parcel is acknowledged and you will be notified concerning its disposal. The referenced lands are not proposed for sale in the immediate future.

Response No. 163, (Source: 3 and 62) The Proposed Plan has identified general areas and criteria for placement of utility corridors. Priority use areas identified in the RMP/EIS serve as exclusion or "window" areas which would aid corridor placement. Public land users can look at the map for the Proposed Plan (in the DEIS) and determine where a cooridor will encounter the fewest restrictions. Refer to the Proposed Plan discussion on Use Authorizations and Major Linear Rights-of-Way under the Lands and Realty Section. Site-specific: Identification of future transmission corridors can only be determined by industry or public needs.

Response No. 164

, (Source: 5) The current status of the referenced land is Category I: Public lands suitable for retention in public ownership and needed for multiple-use management which will not be considered for sale. Ownership consolidation in the public interest, such as exchanges, may be considered. However, the referenced lands have not been previously identified for such purpose at this time.

Response No. 165, (Source: 10) The subject land has been further categorized into Category I: Special Exceptions, which the Bureau would process, initiate, and favor action for consolidation of ownership where overall land management would be improved through USDA-Forest Service or Colorado Division of Wildlife transfer, exchange or boundary adjustment. Sale into private ownership is not the proposed disposal category.

Response No. 166, (Source: 20) The referenced land in Sec. 9 is identified as Category I: Retention in public ownership. The referenced land in Sec. 20 is private surface/federal minerals and can not be considered for sale of surface lands.

Response No. 167, (Source: 32) The referenced lands meet disposal criteria under the Proposed Plan and as such, are uneconomical and unfeasible for the BLM to manage. The parcels in question are located on the borders of the ranch with common abutments with at least one other private land owner. Highest and best benefit to the Bureau and public has placed the referenced land in Category I: Special Exceptions class, with exchange or boundary adjustments with the State of Colorado. The referenced lands are not proposed for sale at this time.

Response No. 168, (Source: 33) Grand County along with the public, will be notified of specific actions in accordance with current BLM realty practices and other current laws, regulations, policy and guidance.

Response No. 169, (Source: 33) The referenced land is proposed as Category I: Public lands suitable for retention in public ownership and needed for multiple-use management which will not be considered for sale. The referenced land has not previously been identified for specific disposal or sales. Present resource values are identified as watershed, grazing, minerals, and minimal dispersed recreation. "Future recreational and water storage use" would be considered upon receipt of a firm application for a sound water storage project.

Response No. 170, (Source: 34) The referenced lands have been classified as Category I: Public lands suitable for retention in public ownership and needed for multipe-use management which will not be considered for sale. Exchanges benefitting the public, Bureau and affected resources and land uses will be considered.

Private river front access to the Blue River in exchange for public grazing lands may meet the criteria for exchange. The proposal will be considered in turn with other proposals within the constraints of

budget, manpower, and current management priorities.

Response No. 171, (Source: 39) Of the referenced lands the BLM is proposing disposal by sale of:

T6N, R80W, Sec. 18, NE1/4SW1/4; Sec. 19, Lots 5 & 6; Sec. 19, Lot 9 and Sec. 30, Lot 5; Sec. 22, SE1/4NE1/4, E1/2SE1/4; Sec. 24, SW1/4NE1/4; and Sec. 27, NE1/4NW1/4.

T5N, R81W, Sec. 21, Lots 1 & 3 and Sec. 22, Lot 4, and Sec. 22, Lot 2.

Section 18 S1/2NE1/4 is within the McCallum Known Recoverable Coal Resoure Area and will retained in Federal Ownership due to designated important coal resources. All other referenced lands have been placed in Category I: Public lands suitable for retention in public ownership and needed for multiple-use management which will not be considered for sale.

The predominant public and resource values considered were for oil and gas development and wildlife habitat management. Referenced lands in T5N, R81W, Section 21, E1/2NE1/4, and Section 22, S1/2NW1/4NW1/4 have no identified priority uses and have been identified for Category II: Sale through further analysis to Draft RMP/EIS Disposal Areas. These parcels are listed in Appendix 10 in the Proposed Plan. Other lands within Category I would be considered for land exchanges or other ownership consolidation which benefit the public, Bureau management, affected resources, and land uses.

Response No. 172, (Source: 42) Present regulations for rights-of-way, TUP's etc., are necessary to control and authorize uses on public lands not covered or reimbursed to the public under coal leases. Rights-of-way authorize other encumbrances upon the public lands and collect rentals for these uses.

Response No. 173, (Source: 48) Public lands identified for disposal have undergone numerous resource specialist screenings and impact analyses for important resource values. In most cases, these disposal parcels exhibited negligible resource values for retention in public ownership, consistent with the ownership consolidation criteria outlined in the Proposed Plan.

The Proposed Plan has designated disposal tracts in East Grand County that would support and enhance the recreation and tourism-based economy of that area.

Of referenced lands identified for disposal, the following parcels were identified as:

T2N, R80W,	Section 25 E1/2NW1/4.	
	Section 35 NE1/4SW1/4, S1/2SW1/4.	Category II
T2N, R79W,	Section 18 E1/2SE1/4.	
	Section 34 SE1/4NW1/4.	Category II
T1N, R78W,	Section 6 SE1/4NE1/4.	Category II
	Section 19 NE1/4NW1/4.	Category II
T1N, R79W, Section 25 NW1/4NE1/4	Category II	
T1S, R78W,	Section 4.....	
	Section 5 SW1/4SW1/4.	
	Section 17.....	Category II

--T1S, R79W, Section 26 S1/2SW1/4, Category I - Special Exceptions: Transfer, exchange, or boundary adjustment to USDA-FS or Colorado DOW.

--T2S, R80W, Section 3, Category I - Special Exceptions: Transfer, exchange, or boundary adjustment to USDA-FS or Colorado DOW.

--Junction Butte/Radium Areas: Category I - Special Exceptions: Transfer, exchange, or boundary adjustments to Colorado DOW.

--Supply Creek Area: T3N, R76W, Section 11 W1/2NW1/4, Category I.

--Sheep Mountain/Crooked Creek Area: Category II - Identified for disposal to support and enhance recreation and tourism-based economies in this area. No general public access. National forest serves as immense buffer/habitat area immediately contiguous with these parcels.

--DeBerard Draw Area: Category I and II - Areas identified for sale or exchange benefitting the public, Bureau, affected resources, and land uses.

--T1N, R76W, Section 7 NE1/4, Category I - State Indemnity Selection Parcels: The State of Colorado has assumed responsibility for all resources involved with selections.

Refer to Response No. 161 for an explanation of the categories.

Response No. 174, (Source: 53) The RMP/EIS process identified some of the public lands in the Grand Lake, Granby and Fraser areas as suitable for disposal, even though these lands provide winter range for big game. Some of the lands identified for disposal would be exchanged for private lands to consolidate ownership. The private lands

obtained through exchange would provide wildlife habitat values *equal* to those provided by public lands exchanged.

Lands identified for disposal in the Silver Creek Area are in a Category I - Special Exceptions which propose exchanges or other ownership consolidation which benefit the public, Bureau, affected resources, and land uses or Category II: Public lands which will be considered for sale. Wildlife resources will be further analyzed in the event of actual disposal. The actual amount of land identified for disposal in this area is small in comparison to adjacent private and USDA-FS lands which are also available for winter range and as a buffer for developmental impacts.

Response No. 175, (Source: 58) The Bureau does notify the public and other governmental agencies prior to the disposal of public lands through the State Clearinghouse, notices of realty action, legal notices, Federal Register Notices, direct corresponsence, public meetings, etc. Detailed Land Report/Environmental Assessments ensure the consideration of wildlife as well as other significant resource values.

Wildlife values are indeed one of the important resource values considered and analyzed in the draft and Proposed Plan. USFWS is invited to enter into negotiations pertaining to the acquisition of lands identified for disposal.

TRANSPORTATION

Response No. 176, (Source: 42) The transportation plan and map will be developed as an activity plan to identify areas needing access and the improvement and maintenance needs of the existing system. The plan will be available for public review and comment.

Response No. 177, (Source: 49) The RMP identifies areas that may be managed or developed for various resources. The alternatives show relative differences in intensity of management or land use. More specific activity plans will be developed for resources using the guidelines established in the RMP for mitigating impacts that may occur. The activity plans will identify more specific areas or quantities that will be managed or offered for lease or development.

The existing transportation network serves most of the areas identified for management and is adequate at present levels of use. Areas that are expected to be developed to higher use levels will be identified and the impacts on the transportation system will be considered. Coordination with State and County highway departments will take place to determine the ability of the system to accommodate the increased use and to analyze the impacts. Road segments that need to be improved to handle the increase in traffic volume or heavy loads will be identified.

Response No. 178, (Source: 51) The transportation plan will be developed as an activity plan, using the guidelines developed in the RMP/EIS. The existing inventory has information on the location and condition of existing roads. The transportation plan will identify areas needing new or improved access, easement needs, construction standards, and road improvement and maintenance needs. Approximate road locations and mileages will be developed in the plan. Actual road locations and mileages will not be known until survey and design work is completed on each road. The transportation plan will be available for public review and comment.

SOILS

Response No. 179, (Source: 52) The greatest impact to the soil from the Preferred Alternative is the change in the way that soil is viewed. This is because the Resource Management Plan does not authorize disturbance of the soil, but rather defines management priorities for different geographic areas. In a priority area for range, soil will be viewed principally as a source of biologic production, whereas in an urban expansion priority area, soil will be viewed principally in terms of its engineering properties. The difference in perspective is reflected in management.

Response No. 180, (Source: 52) Our reclamation stipulations require that the postdisturbance productivity of the soil be equal to or greater than predisturbance productivity. Experience in this resource area indicated that achieving equal or greater productivity is routinely accomplished. Changes in soil classification, horizonation, and structure are not a significant impact to the soil if productivity of the original soil is matched or exceeded.

Detailed discussion of short term impacts to the soil is not possible without site specific information on the location of surface disturbing activity. This is because different soils will react differently to the same disturbance. All surface disturbing activities will be analyzed further for impacts to the soil prior to their authorization. Detailed discussion of any impacts (should impacts occur) will be included in documents authorizing surface disturbing activities. In order to minimize redundancy in the document, the impact section was written as presented in the document.

MISCELLANEOUS

Response No. 181, The text has been revised.

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