



U.S. Department of the Interior
Bureau of Land Management

Draft Eastern Colorado Resource Management Plan & Environmental Impact Statement—Volume 1: Executive Summary and Chapters 1–5

Royal Gorge Field Office



Estimated total lead agency cost associated with
developing and producing this document: \$3,940,400

Royal Gorge Field Office

**Draft Eastern Colorado
Resource Management Plan &
Environmental Impact Statement
BLM/CO/PL-19/003**

**Volume 1: Executive Summary and
Chapters 1-5**

**U.S. Department of the Interior
Bureau of Land Management**

June 2019

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BLM MISSION

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/CO/PL-19/003



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado State Office
2850 Youngfield Street
Lakewood, Colorado 80215-7210
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JUN 19 2019

Dear Reader:

Attached for your review and comment is the Draft Eastern Colorado Resource Management Plan/Draft Environmental Impact Statement (Draft RMP/EIS) for the Bureau of Land Management (BLM) Royal Gorge Field Office and planning area. BLM prepared this document in consultation with cooperating agencies, and in accordance with the National Environmental Policy Act of 1969, as amended, the Federal Land Policy and Management Act of 1976, as amended, implementing regulations, the BLM's Land Use Planning Handbook (H-1601-1) and other applicable laws and policies.

The planning area encompasses about 35 million acres of land, which includes 658,200 acres of BLM-administered surface lands and 3,311,900 acres of BLM-administered mineral estate managed by the Royal Gorge Field Office. The planning area includes 37 counties in eastern Colorado, from just west of the Front Range to the eastern border of the state, and from the Wyoming/Nebraska border in the north to the New Mexico/Oklahoma border in the south. The decision area for this RMP includes all the public land and federal mineral estate administered by the BLM within the field office boundaries, except for those within the Browns Canyon National Monument, which the BLM will manage under a separate RMP. When approved, this RMP will replace the 1986 Northeast RMP and the 1996 Royal Gorge Resource Area RMP, and will guide the management of public lands administered by the Royal Gorge Field Office into the future. The Eastern Colorado Draft RMP/EIS and supporting information is available for review on the project web site at <https://go.usa.gov/xQcZT>.

The BLM encourages the public to provide information and comments pertaining to the analysis presented in the Draft RMP/EIS. We are particularly interested in feedback concerning the adequacy and accuracy of the proposed alternatives, the analysis of their respective management decisions and any new information that would help the BLM as it develops the plan. In developing the Proposed RMP/Final EIS, which is the next planning phase, the decision maker may select various management decisions from each of the alternatives analyzed in the Draft RMP/EIS to create a management strategy that best meets the needs of the resources and values in this area. As a member of the public, your comments on the Eastern Colorado Draft RMP/EIS will help formulate the Proposed RMP/Final EIS. Comments will be accepted for 90 calendar days following the Environmental Protection Agency's publication of its Notice of Availability in the Federal Register. The BLM can best utilize your comments and resource information submissions if received within the 90-day review period.

Comments must be submitted by the following methods:

- Electronic comments via the ePlanning website at <https://go.usa.gov/xQcZT>
- Hard copy comments via mail or hand-delivered to the Royal Gorge Field Office, 3028 E. Main St., Cañon City, CO 81212

The BLM strongly encourages you to submit electronic comments through ePlanning to streamline analysis.

Your review and comments on the content of this document are critical for a successful planning effort. If you wish to submit comments on the Draft RMP/EIS, we request that you make your comments as substantive and specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, with reference to a section or page number. While opinion based or preferential comments will be considered and included as part of the decision making process, they will not receive a formal response from the BLM.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment - including your personal identifying information - may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Public meetings to provide an overview of the document, respond to questions, and take public comments will be announced through local media, website, and/or public mailings at least 15 days in advance. More information on these meetings is on the project website.

Copies of the Draft RMP/EIS have been sent to affected Federal, state and local government agencies as well as tribal governments. Copies of the Draft RMP/EIS are available for public inspection at the BLM Royal Gorge Field Office, 3028 East Main Street, Cañon City, CO 81401, during normal working hours (Monday to Friday, 8:00-4:30 p.m., except holidays) and on the ePlanning site at <https://go.usa.gov/xQcZT>.

Thank you for your interest in the Eastern Colorado RMP/EIS. We appreciate your input to the planning process. For additional information or clarification, please contact John Smeins, RMP project manager, at the address above, or call 719-269-8500.

Sincerely,



Jamie E. Connell
Colorado State Director
Bureau of Land Management

ABSTRACT

1. Responsible Agency: United States Department of the Interior
Bureau of Land Management
2. Type of Action: Administrative (X) Legislative ()
3. Document Status: Draft (X) Final ()
4. Abstract: This Draft Resource Management Plan & Environmental Impact Statement describes and analyzes four alternatives for managing approximately 658,200 acres of Bureau of Land Management-administered surface land and 3,311,900 acres of Bureau of Land Management-administered mineral estate in eastern Colorado. The alternatives are Alternative A (the “no action” alternative, i.e., continuation of management under the 1986 Northeast Resource Management Plan and the 1996 Royal Gorge Resource Area Resource Management Plan), Alternative B (emphasis on natural processes), Alternative C (emphasis on demand for resource use), and Alternative D, the Preferred Alternative (the human ecoregion). These alternatives address such issues as energy development, recreation management, travel management, lands and realty, fish and wildlife habitat, and special designations such as areas of critical environmental concern and wild and scenic rivers.
5. Review Period: The review period for the Draft Eastern Colorado Resource Management Plan & Environmental Impact Statement is 90 calendar days, beginning the day the Environmental Protection Agency published a notice of availability in the *Federal Register*.
6. For further information contact:
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ACRONYMS AND ABBREVIATIONS

\$	U.S. dollars
%	Percent
<	Less than
AAQS	Ambient Air Quality Standards
ACEC	Area of critical environmental concern
AUM	Animal unit month
BCA	Backcountry conservation area
BLM	Bureau of Land Management
BMP	Best management practice
CARMMS	Colorado Air Resources Management Modeling Study
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	Methane
CO	Carbon monoxide
CO ₂	Carbon dioxide
COA	Condition of approval
CPW	Colorado Parks and Wildlife
CSU	Controlled surface use
DOI	Department of the Interior
dv	Deciviews
EIS	Environmental impact statement
EP	Eastern Plains Landscape
EPA	U.S. Environmental Protection Agency
ERMA	Extensive recreation management area
ESA	Endangered Species Act
FAR	Functionally at risk
FLPMA	Federal Land Policy and Management Act
FR	Front Range Landscape
GHG	Greenhouse gas
GIS	Geographic information system
IDT	Interdisciplinary team
IM	Instruction Memorandum
LHA	Land health assessment
N ₂ O	Nitrous oxide

NAA	Nonattainment area
NAAQS	National ambient air quality standards
NEPA	National Environmental Policy Act
NO ₂	Nitrogen dioxide
NOI	Notice of intent
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NSO	No surface occupancy
NWSRS	National Wild and Scenic Rivers System
OHV	Off-highway vehicle
PFC	Proper functioning condition
PFYC	Potential fossil yield classification
PM ₁₀	Particulate matter less than 10 microns in diameter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
PSD	Prevention of Significant Deterioration
RAC	Resource Advisory Council
RF	Rural Foothills Landscape
RGFO	Royal Gorge Field Office
RMP	Resource Management Plan
ROD	Record of decision
ROW	Right-of-way
SO ₂	Sulfur dioxide
SRMA	Special recreation management area
SSURGO	Soil Survey Geographic Database
TL	Timing limitation
TMP	Travel management plan
UARV	Upper Arkansas River Valley Landscape
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRI	Visual resource inventory
VRM	Visual resource management
WSA	Wilderness study area
WSR	Wild and scenic river
WWEC	West-wide Energy Corridor

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Reader's Guide to this Document

Volume 1

Chapter 1: Introduction

Summarizes the purpose and need, provides an overview of the BLM planning process, and the overall vision for management of the planning area.

Chapter 2: The Alternatives

Provides highlights of the four management alternatives.

Chapter 3: Summary of Affected Environment and Impacts

Summarizes the existing environmental conditions of the biological, physical, and socioeconomic resources that could be affected by implementing the management alternatives. Summarizes the effects that may result from implementing each of the alternatives.

Chapter 4: Consultation and Coordination

Describes the public outreach and participation opportunities made available during the RMP/EIS process, as well as the consultation and coordination efforts undertaken by the BLM.

Chapter 5: References

Provides full citation information for all references cited in chapters 1-4 of the document.

Volume 2

Appendix A Comparison of Alternatives

Volume 3

Appendix B Affected Environment and Analysis of Impacts

Volume 4

Appendix C Mitigation, Adaptive Management, Reclamation, and Monitoring Plan

Appendix D Adaptive Drought Management

Appendix E Recreation and Visitor Services Management

Appendix F Livestock Grazing Allotments and Allotment Levels

Appendix G Restrictions Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Appendix H Coal Screening for the Eastern Colorado Planning Area

Appendix I Legal Descriptions for Lands Identified for Disposal

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Appendix K Maps

Appendix L Glossary

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EXECUTIVE SUMMARY

INTRODUCTION

In June 2015, the Bureau of Land Management (BLM), Royal Gorge Field Office (RGFO) published a notice of intent (NOI) in the *Federal Register*, initiating the planning process to revise the 1986 Northeast Resource Management Plan (RMP) (BLM 1986) and 1996 Royal Gorge Resource Area RMP (BLM 1996) and consolidate the revisions into one resource management plan/environmental impact statement (RMP/EIS). This Draft Eastern Colorado RMP/EIS is a major stage in the development of the RMP (see Chapter 1, *Introduction*, for further details about the RMP planning process).

The BLM prepared this Draft RMP/EIS with public input and in consultation with tribal governments and cooperating local, state, and federal agencies. The Draft RMP/EIS was prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA); the Federal Land Policy and Management Act of 1976, as amended (FLPMA); implementing regulations; the BLM's NEPA Handbook (H-1790-1); the BLM's Land Use Planning Handbook (H-1601-1); and other applicable law and policy.

The Eastern Colorado RMP/EIS planning area consists of approximately 35 million acres of land under various jurisdictions in eastern Colorado, including 7,177,100 acres of federal mineral estate, which may lie beneath other surface ownership. The BLM actions considered in this Draft RMP would only apply to those areas for which the BLM has the authority to make management decisions (the decision area), which comprise 658,200 acres of BLM-administered surface land and 3,311,900 acres of BLM-administered mineral estate (see Tables 1.1 and 1.3 in Chapter 1). Although the Browns Canyon National Monument is within the Eastern Colorado RMP/EIS planning area, the monument will be managed under a separate RMP.

The BLM prepared the Eastern Colorado RMP/EIS to ensure that public lands are managed in accordance with the intent of Congress as stated in FLPMA, to provide management guidance for the resources and uses of BLM-administered lands, and to provide a foundation for future land management actions within the planning area. This RMP also incorporates new data and responds to new policies and changing resource demands. The Eastern Colorado RMP/EIS does not describe how particular programs or projects would be implemented, as those decisions are deferred to the implementation stage of the planning process.

PUBLIC OUTREACH

Early in the development of the Draft Eastern Colorado RMP/EIS, the RGFO held several meetings to encourage members of the public to share their overall vision of how the BLM should manage its public lands. On June 1, 2015, the BLM initiated a 60-day formal scoping process for the Eastern Colorado RMP/EIS, with the publication of an NOI in the *Federal*

Register (Vol. 80, No. 104, page 31063). Detailed information about the public outreach process and the comments received during the scoping period can be found in the *Scoping Summary Report for the Eastern Colorado Resource Management Plan* (BLM 2015a).

The BLM interdisciplinary team began developing alternatives in 2015 with an extensive review of current management decisions from the existing RMPs (BLM 1986; BLM 1996) and associated amendments. With the help of its cooperating agencies, the BLM identified planning issues to address in the RMP and formulated four preliminary alternatives. These preliminary alternatives were released for public review for 60 days in March and April 2017. The BLM revised the preliminary alternatives based on the public comments it received to develop the draft alternatives proposed in this document.

ISSUES

During public scoping and through BLM staff input, the RGFO identified 124 general issues under 23 topics (BLM 2015a) that are considered in this Draft Eastern Colorado RMP/EIS. The BLM interdisciplinary team subsequently identified additional issues. Some key planning issues addressed in this RMP are as follows:

- How should the BLM manage recreation to increase access to public lands, improve facilities, protect natural and cultural resources, provide a variety of recreational opportunities, and maximize socioeconomic contributions?
- How should the BLM manage increased visitation from motorized and non-motorized uses to maintain and improve resource conditions and minimize conflict?
- How should the BLM increase access to public lands and resources?
- How should the BLM manage energy and mineral resources to maintain or improve natural and cultural resource conditions, minimize user conflicts, and maximize socioeconomic contributions?
- How should the BLM manage vegetation in order to reduce fuel loading, control and prevent noxious and invasive weeds, and maintain a healthy forest ecosystem, while adhering to its multiple-use mandate?
- How should the BLM reduce regulatory burden and increase management efficiencies on public lands and resources?
- How should the BLM manage public lands to maintain and improve wildlife habitats while adhering to its multiple-use mandate?
- How should the BLM manage surface and groundwater resources to maintain and improve habitat, improve water quality, and protect drinking water sources, while adhering to its multiple-use mandate?
- How should the BLM respond to the growth of communities and expansion of the urban interface?

These and other issues are addressed in further detail in Chapter 2 and Appendix A of this document.

MANAGEMENT ALTERNATIVES

The alternatives were developed to formulate different management approaches to address the issues raised by the public and BLM subject-matter specialists. This Draft RMP/EIS describes one “no action” (Alternative A) and three “action” alternatives (Alternatives B, C, and D). Each alternative describes a different vision and direction for the field office and identifies a unique set of corresponding goals, objectives, allowable uses, and management actions that address the issues raised for the resources, resource uses, special designations, and social and economic conditions in the field office.

Under the No Action Alternative, the BLM would continue to be guided by current management in the existing RMPs (BLM 1986; BLM 1996) and associated amendments.

Alternative D, the Preferred Alternative, emphasizes responding to the ways in which people and local communities want to interact with public lands and resources while adhering to BLM’s multiple use mandate. Alternative D identifies four landscapes in the planning area, each of which has a different set of goals: Eastern Plains, Upper Arkansas River Valley, Rural Foothills, and Front Range. The goals for these individual landscapes are described in more detail in Chapter 2 and Appendix A. Overall, the Preferred Alternative would increase access to public lands for recreational and hunting and fishing uses and by increasing areas available for rights-of-way and mineral development. In addition, it would decrease regulatory burden and improve management efficiencies by minimizing right-of-way avoidance areas and fluid mineral restrictions.

ANALYSIS OF IMPACTS

Impacts can be beneficial or adverse, may result from an action directly or indirectly, or cumulatively with other actions, and can be long-term or short-term. The analysis in this document considers potential effects from the management of each individual resource on other resources. The discussion of environmental consequences focuses on the most critical impacts in order to streamline the analysis and address the most important issues of concern for the public, cooperating agencies, and the BLM. If a particular impact is not discussed, it is because no such impact is expected or the impact is not within the scope of this Draft RMP/EIS.

There are some major conclusions regarding the differences between the alternatives to be drawn from the analysis of impacts. The continuation of current management under Alternative A does not reflect current policy and guidance for all BLM program areas. Alternative B’s prioritization of ecosystem function would constrain opportunities to utilize BLM-administered lands for energy and mineral development and livestock grazing, for purposes of conserving and restoring wildlife habitat, native vegetation, aquatic systems, and other natural values. In contrast,

Alternative C would allow greater effects on natural systems in order to meet public demand for access, energy development, livestock grazing, and protection of critical infrastructure.

Alternative D blends aspects of Alternatives B and C, generally allowing higher utilization of and impacts to natural resources to meet national needs and the needs of local communities, while enhancing recreational opportunities for public land users throughout the planning area.

Under all alternatives, BLM management decisions would have the greatest effect in areas with large, contiguous areas of BLM-administered surface lands, which are located primarily in the Upper Arkansas River Valley and Rural Foothills portions of the planning area. The more scattered pattern of BLM surface ownership in the Front Range and Eastern Plains limits the BLM's ability to influence resource conditions and land uses relative to broader trends affecting surrounding lands. Additionally, regional and global trends in population growth, climate, and wildfire occurrence will continue to affect BLM lands regardless of the selected alternative.

The BLM's analysis of the potential impacts of the alternatives on human and natural environments is more fully described in Chapter 3 and Appendix B.

CHAPTER 1. INTRODUCTION

This chapter states the purpose and need for the Eastern Colorado Resource Management Plan & Environmental Impact Statement (RMP/EIS) and describes the planning area. It discusses how the RMP addresses issues raised during scoping and lists the planning criteria and constraints guiding development of the RMP. Finally, it discusses consistency with other related plans.

1.1. PURPOSE AND NEED FOR THE PLAN

The purpose of the Eastern Colorado RMP/EIS is to provide guidance for managing the resources and uses of public lands administered by the Bureau of Land Management (BLM) Royal Gorge Field Office (RGFO), to provide a foundation for future land management actions within the planning area, and to ensure that public lands are managed in accordance with the intent of Congress, as stated in the Federal Land Policy and Management Act of 1976, as amended (FLPMA) and other legislation. Specifically, the purpose of the action includes:

- Improving public access and resource management through a consolidated land base. The FLPMA requires, in part, that the “public lands be managed in a manner that will...provide for outdoor recreation and human occupancy and use” (43 U.S.C. 1701 [Sec. 102.a.8]). The FLPMA also requires the “acquisition of non-federal land for public purposes and the exchange of such lands...be consistent with the prescribed mission of the...agency involved” (43 U.S.C. 1701 [Sec.102.a.10]).
- Improving and restoring ecological sustainability/resiliency. The FLPMA also requires, in part, that the “public lands be managed in a manner that will protect the quality of... ecological, environmental, air and atmospheric, water resource values...;that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals...” (43 U.S.C. 1701 [Sec. 102.a.8]).
- Providing recreation opportunities. The FLPMA requires that, among other uses, “the public lands be managed in a manner that will...provide for outdoor recreation and human occupancy and use” (43 U.S.C. 1701 [Sec. 102.a.8]).
- Providing economic opportunities. The FLPMA requires that, among other uses, “the public lands be managed in a manner which recognizes the Nation’s need for domestic sources of minerals, food, timber and fiber from the public lands” (43 U.S.C. 1701 [Sec. 102.a.12]).

The need for this RMP is to respond to the planning criteria (section 1.4), to new policies and changing resource demands, and makes certain decisions required by law, regulation, or policy. The need for the revision of the RMP also stems from the issues identified during scoping.

1.2. PLANNING AREA DESCRIPTION

The BLM currently manages the RGFO under guidance provided by the Northeast RMP (BLM 1986), the Royal Gorge Resource Area RMP (BLM 1996), and associated amendments in two separate planning areas in the field office (Figure 1.1). The combined Eastern Colorado RMP/EIS planning area encompasses more than 35 million acres of land under various jurisdictions, including 7,177,100 acres of federal mineral estate. However, the BLM uses and actions considered in this draft plan would only apply to 658,200 acres of BLM-administered surface land (Figure 1.2) and 3,311,900 acres of BLM-administered mineral estate (Figure 1.3) within the planning area. This is the decision area, for which the BLM has the authority to make management decisions. Although the BLM administers minerals under National Forest System lands, the U.S. Forest Service planning process determines which of those lands are open to leasing and development and which stipulations apply.

The decision area includes BLM-administered mineral estate that is underneath privately or state-owned surface, which is referred to as split estate. Nearly 81 percent (2,673,000 acres) of all BLM-administered mineral estate in the decision area is split estate. Table 1.1 shows acres of surface ownership¹ in the planning area. Table 1.2 to Table 1.4 show acres of federal mineral estate, BLM-administered mineral estate, and split estate in the planning area. This Draft RMP does not include planning or management decisions for lands or minerals that are privately owned, owned by the State of Colorado, owned by local governments, or administered by other federal agencies (e.g., the U.S. Forest Service). The Eastern Colorado RMP/EIS planning area also does not include the Browns Canyon National Monument, because planning for the monument is a separate process.

¹ Field office boundaries were realigned as of October 1, 2016, so Saguache County is no longer in the RGFO and is not included in the Eastern Colorado RMP planning area.

Figure 1.1. Existing Land Use Plan Areas for the Royal Gorge Field Office

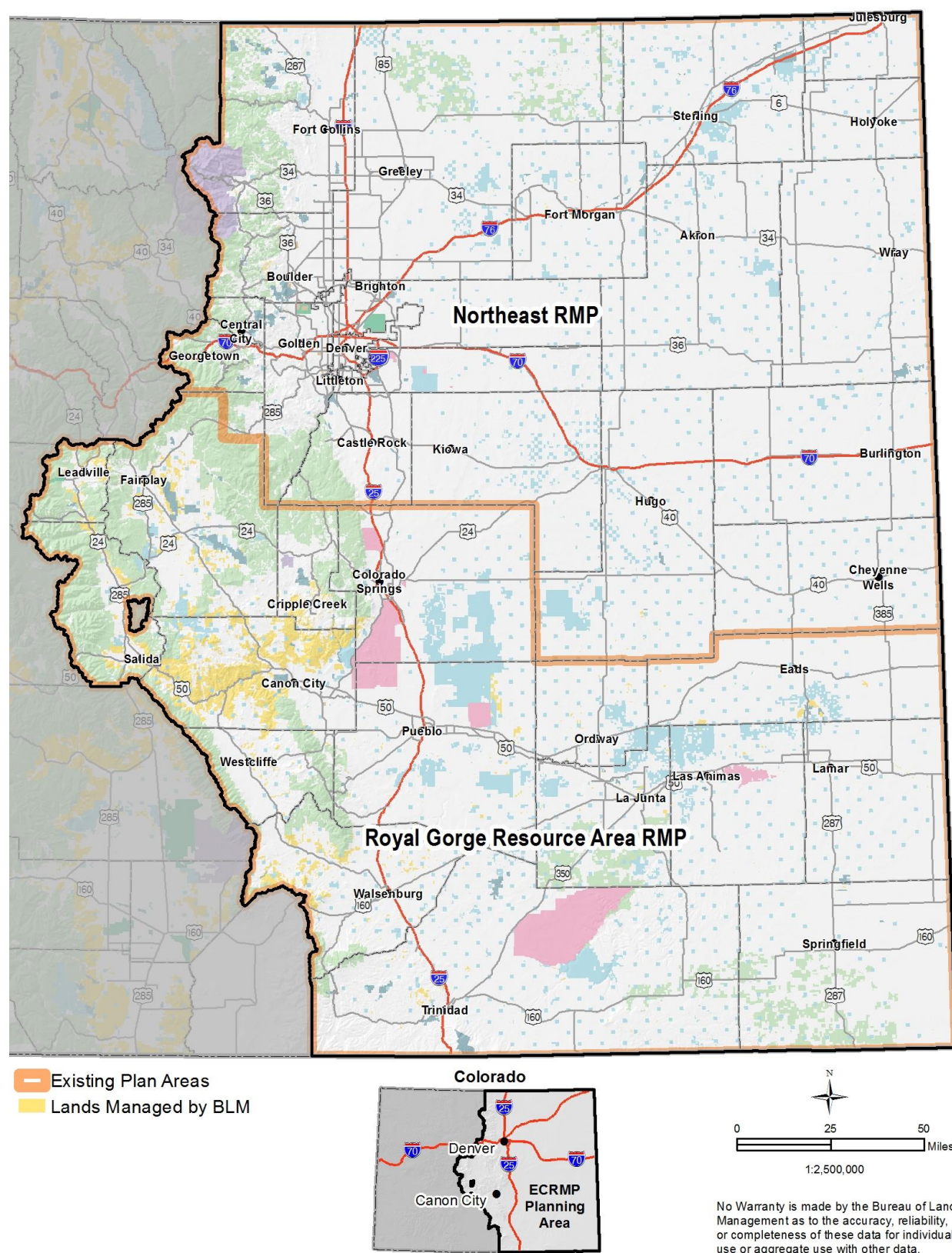


Figure 1.2. BLM-administered Surface Land in the Eastern Colorado RMP/EIS Planning Area

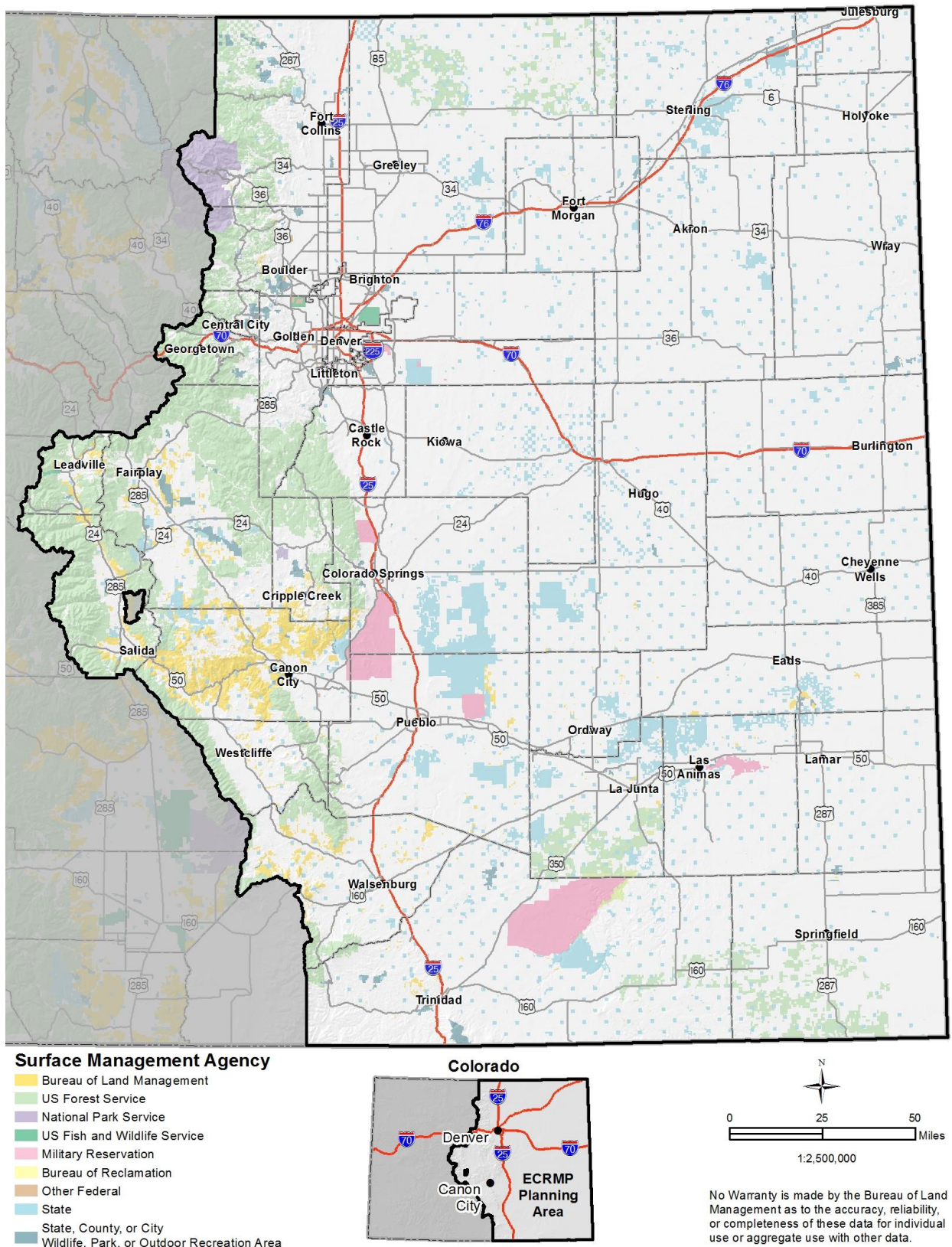


Figure 1.3. BLM-administered Mineral Estate in the Eastern Colorado RMP/EIS Planning Area

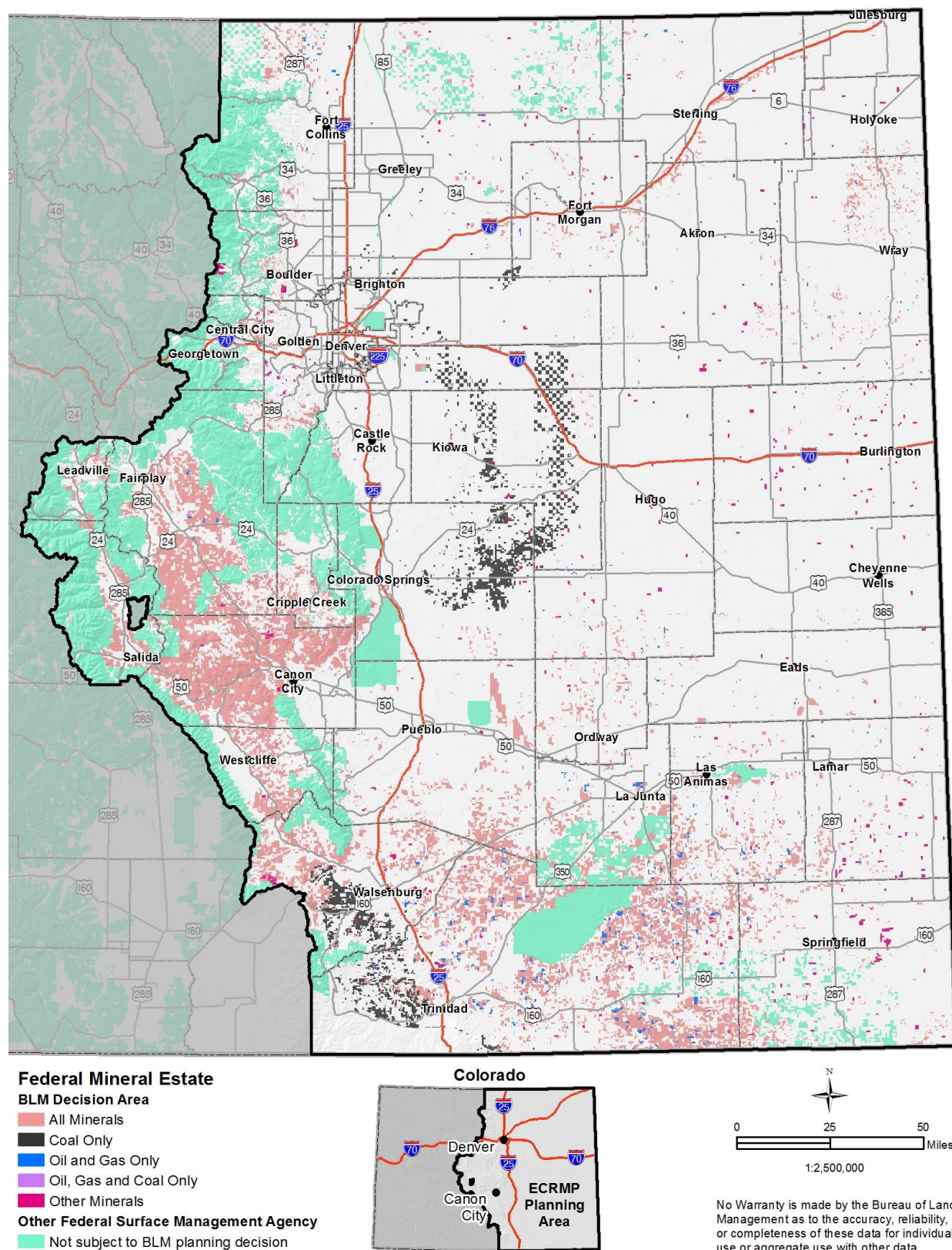


Table 1.1. Surface Ownership in the Eastern Colorado RMP/EIS Planning Area

Surface Ownership	Acres	Percent
Bureau of Land Management	658,200	2
Bureau of Reclamation	100	<1
Department of Defense	446,800	1
National Park Service	175,600	<1
U.S. Fish and Wildlife Service	23,800	<1
U.S. Forest Service	3,463,000	10
Other federal	7,100	<1
State	2,191,700	6
Local wildlife areas/parks, county, city	226,300	1
Private	28,365,600	80
Total surface acres	35,555,200	100

Source: BLM 2016a.

< less than

Table 1.2. Federal Mineral Estate in the Eastern Colorado RMP/EIS Planning Area

Federal Mineral Estate	Acres	Percent
All minerals	6,408,700	89
Coal only	436,500	6
Oil and gas only	86,700	1
Oil, gas and coal only	1,500	<1
Other	243,800	3
Total federal mineral estate	7,177,100	100

Source: BLM 2016a.

< less than

Table 1.3. Federal Mineral Estate Decision Area in the Eastern Colorado RMP/EIS Planning Area

BLM-administered Mineral Estate ¹	Acres	Percent
All minerals	2,654,200	80
Coal only	436,200	13
Oil and gas only	86,100	3
Oil, gas, and coal only	1,500	0
Other	133,900	4
Total BLM-administered mineral estate for oil and gas (subsurface decision area minus coal only)	2,875,700	87
Total BLM-administered mineral estate (subsurface decision area)	3,311,900	100

Source: BLM 2016a.

¹ Includes areas of BLM, state, local, and private surface over BLM-administered mineral estate. Also includes “Other federal” surface. Although the BLM administers minerals under USFS surface, it does not make the planning decisions for those minerals; therefore, they are not included in these totals.

Table 1.4. Split Estate in the Eastern Colorado RMP/EIS Planning Area

Split Estate ¹	Acres	Percent
All minerals	2,023,900	76
Coal only	436,100	16
Oil and gas only	86,100	3
Oil, gas and coal only	1,500	0
Other	125,500	5
Total split estate	2,673,000²	100

Source: BLM 2016a.

¹ Includes areas of state, local, and private surface over BLM-administered mineral estate.

² Surface ownership for the federal mineral split estate comprises 30,900 acres of local surface ownership, 2,565,800 acres of private surface ownership, and 76,300 acres of state surface ownership.

1.3. SCOPING AND ISSUES

The BLM’s land use planning process provides opportunities for members of the public to participate in decision-making and allows for full environmental disclosure. This is in accordance with 40 CFR 1506.6; 43 CFR 1610.2; Section 202 of FLPMA; the BLM’s land use planning handbook, H-1601-1 (BLM 2005a); and the BLM’s National Environmental Policy Act (NEPA) handbook, H-1790-1 (BLM 2008a). The RGFO used the following methods to solicit public involvement during development of the Draft Eastern Colorado RMP/EIS:

- Public “envisioning” meetings, held prior to public scoping, to encourage members of the public to share their overall vision of how the BLM should manage its public lands;
- Public scoping before the NEPA analysis began, to help determine the issues and alternatives that should be addressed in the RMP/EIS;
- Public outreach through meetings, news releases, newsletters, and the Eastern Colorado RMP/EIS planning website: <https://go.usa.gov/xQcZT>;
- Collaboration and consultation with tribal governments; federal, state, and local agencies; water conservancy districts; the Rocky Mountain District Resource Advisory Council; and others;
- Public review and comment on the *Preliminary Alternatives Report* (BLM 2017a);
- Public review and comment on the *Draft Basis for Analysis* (BLM 2017b); and
- Public review and comment on the Draft RMP/EIS.

The pre-planning, public scoping, and preliminary alternatives phases are complete and are described in detail in the *Eastern Colorado Resource Management Plan Envisioning Report* (Casey 2016), *Scoping Summary Report for the Eastern Colorado Resource Management Plan* (BLM 2015a), and *Preliminary Alternatives and Draft Basis for Analysis Comment Report* (BLM 2017c), respectively. These reports can be found under “Documents and Reports” on the Eastern Colorado RMP/EIS planning website.

1.3.1. Issues Addressed

For the purposes of this document, an issue is a point of disagreement, debate, or dispute with a proposed action (BLM 2008a). It is more than simply a position statement or opinion, such as a disagreement with grazing on public lands. It is based on an anticipated environmental effect. An issue may be affected by a proposed action or alternative; has not already been decided by law, regulation or by a previous decision; and can be scientifically analyzed (BLM 2008a). During public scoping and through BLM staff input, the RGFO identified 124 general issues under 23 topics (BLM 2015a) that were considered in the Draft Eastern Colorado RMP/EIS. All current program-specific issue statements are listed under their appropriate topics in the scoping summary report (BLM 2015a).

1.3.2. Issues Considered but Not Further Analyzed

Public scoping also raised issues that will not be addressed in the RMP such as those that are resolved through policy or administrative actions, issues that were otherwise outside the scope of the Eastern Colorado RMP/EIS, and issues that have already been addressed but require outreach to the commenter. These issues are discussed more thoroughly in section 2.5 of the scoping summary report (BLM 2015a). They were not analyzed in this Draft RMP/EIS.

1.4. PLANNING CRITERIA AND CONSTRAINTS

Planning criteria are the standards that help guide data collection as well as development and selection of the alternatives in the RMP (43 CFR 1610.4-2). Planning criteria are generally based on applicable laws, BLM Director and State Director guidance, and public and cooperator input (BLM 2005a). The BLM RGFO developed preliminary planning criteria before public scoping, then asked the public to comment on them and suggest additional criteria. Following are the planning criteria that guided development of this Draft RMP:

- The BLM will recognize in the RMP/EIS the special importance of BLM-administered lands to people who live in communities surrounded by BLM-administered lands and the importance of BLM-administered lands to the nation as a whole.
- The BLM will make every effort to encourage public participation throughout the RMP/EIS process.
- Environmental protection and commodity extraction are both desirable and necessary objectives of sound land management practices and are not to be considered mutually exclusive priorities.
- Broad-based public participation will be an integral part of the RMP/EIS process. Decisions in the RMP will strive to be compatible with the existing plans and policies of adjacent local, state, federal, and tribal agencies, as long as the decisions are consistent with the purposes, policies, and programs of federal law and regulations applicable to BLM-administered lands.

- The BLM will strive to minimize potential adverse impacts.
- The BLM's decisions will accord with existing laws.
- The BLM will facilitate energy, mineral, and oil and gas development and production in accordance with existing national policy and laws in a manner that allows for environmentally sound exploration, development, and operations.
- The BLM will facilitate oil and gas leasing in a way that addresses the unique resources of the South Park area.
- The RMP/EIS will consider management of lands bordering the decision area and will strive to harmonize management of BLM-administered lands in the decision area with adjacent lands outside the decision area.

FLPMA provides the primary legal authority for the BLM to manage public lands under its jurisdiction, and to develop the Eastern Colorado RMP/EIS. This law provides for land use planning, land acquisition and disposal, administration, rangeland management, rights-of-way (ROWs), and designated management areas. NEPA is the primary law governing the process for development of the Eastern Colorado RMP/EIS. NEPA requires the consideration and public availability of information on the environmental impacts of major federal actions significantly affecting the quality of the human environment. Decisions in the Eastern Colorado RMP/EIS as well as the conduct of the planning process itself must conform to these laws.

BLM management actions are subject to certain statutory constraints. All management direction and actions developed as part of the BLM planning process are subject to valid existing rights and must meet the objectives of BLM's multiple-use management mandate and responsibilities (FLPMA Section 202[c] and [e]). Valid existing rights include all valid lease, permit, ROWs, or other land use rights or authorizations in effect on the date of approval of this RMP.

1.5. CONSISTENCY WITH OTHER RELATED PLANS

BLM management plans must be consistent with officially approved or adopted land use or resource-related plans of other federal, state, and local agencies, and tribal governments, to the extent that those plans are consistent with federal laws and regulations applicable to BLM-administered public lands. The RGFO is considering other such plans during development of this RMP/EIS, examples of which are given in the *Analysis of the Management Situation for the Eastern Colorado RMP* (BLM 2015b). The BLM is not currently aware of any inconsistencies between the Draft RMP and local land-use plans.

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CHAPTER 2. THE ALTERNATIVES

This chapter summarizes a range of reasonable management approaches that the BLM could implement to meet the purpose and need for the Eastern Colorado RMP/EIS. This chapter also provides information on alternatives the BLM considered but did not analyze in detail. For the alternatives analyzed in detail, this chapter identifies common management, describes each alternative generally, and gives the highlights of the BLM's comparison of the alternatives. Refer to Appendix A, *Comparison of Alternatives*, for detailed goals, objectives, allowable uses, and management actions of each alternative. Appendix A has the complete management alternatives considered and analyzed in this RMP/EIS.

2.1. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

2.1.1. Closure of Entire Decision Area to Livestock Grazing

The BLM considered an alternative that would close all BLM-administered surface lands to livestock grazing. This alternative was eliminated from detailed analysis for several reasons: First, the closure of the entire planning area would not meet the purpose and need of the RMP and would be inconsistent with the Taylor Grazing Act and FLPMA. Second, the BLM did not identify any issues or conflicts that would be resolved by the complete elimination of livestock grazing within the decision area therefore making the impacts of this alternative substantially similar to those identified in the range of alternatives. Third, in some localized areas, members of the public expressed concerns about livestock grazing (BLM 2015a), and adjustments to livestock use have been incorporated into various alternatives, as appropriate, to address these issues. In Alternative B, 96,400 acres would be unavailable for livestock grazing. This level of reduced grazing represents a “meaningful reduction” in grazing under one of the existing alternatives, consistent with BLM Instruction Memorandum 2012-169 (BLM 2012a). Finally, the BLM has considerable discretion through livestock grazing regulations to determine and adjust stocking levels, seasons of use, and livestock grazing management activities, as well as forage allocation.

Land health was assessed across the Eastern Colorado RMP/EIS decision area using the *Colorado Public Land Health Standards* (BLM 1997), which describe conditions needed to sustain public land health and relate to all uses of BLM lands. Most lands are meeting land health standards. Less than 1 percent of the planning area was determined not to be meeting Standards 1 and 3 with livestock grazing noted as a significant contributing factor.

Closure to grazing is not the only available mechanism to reduce grazing-related impacts. If livestock grazing is identified as a significant factor for not achieving or moving toward achieving land health standards, or if monitoring shows an adjustment is needed, then

implementation-level management changes can be made in coordination with the permittees and interested members of the public. Such actions can include adjusting animal unit months (AUMs), changing the season or length of grazing use, implementing vegetation treatments, and adjusting grazing management practices. Permit terms and conditions could also be modified.

In addition, closing the Eastern Colorado RMP/EIS planning area to livestock grazing would be inconsistent with the planning criteria that environmental protection and commodity extraction are both desirable and necessary objectives and are not to be considered mutually exclusive priorities.

2.1.2. Closure of All Public Lands to New Fluid Mineral Leasing

The BLM considered several variations of proposals closing public lands in the planning area to new leasing of federal fluid minerals, but eliminated them from further analysis. These proposals included closing all federal fluid minerals, closing all BLM surface, and closing all areas with no or low potential for fluid mineral development.

The full closure alternatives were eliminated from detailed analysis because no resource conflicts were identified that could only be resolved by closing the entire planning area. Greenhouse gas emissions and associated climate change impacts were considered as a potential resource conflict; however, the BLM has no suitable thresholds or standards to measure and compare the significance of impacts related to greenhouse gas emissions under those alternatives relative to other alternatives. In addition, BLM has no available method to measure residual impacts after mitigation. Therefore, this alternative would have substantially similar impacts to resources of concern as those analyzed in detail.

Closing the entire planning area to new fluid mineral leasing would be ineffective in meeting the BLM's purpose and need as specified by the planning criteria for the RMP, specifically, facilitating oil and gas development and production in a manner that allows for environmentally sound exploration, development, and operations. Oil and gas development is an authorized use of public lands and meets the BLM's multiple-use objectives, and current BLM policy (H-1624-1). Leasing of public lands for fluid mineral exploration and production is authorized and directed by FLPMA, the Mineral Leasing Act of 1920 (as amended), and the Energy Policy Act of 2005 (Public Law 109-58). Current BLM policy directs field offices to apply the least restrictive management constraints necessary to achieve resource goals and objectives for principal uses of public lands.

In addition, the federal fluid mineral estate in much of the planning area has already been leased, and the majority of the leases are developed. Furthermore, in the areas with the highest oil and gas potential and greatest amount of activity, the federal government is not the primary owner of mineral interests. If these federal mineral interests were not available for leasing, federal minerals would be stranded or could be drained by adjacent development, with no compensation to the public. Because mineral development of adjacent non-federal minerals will continue,

along with development of existing leases that reflect valid existing rights, closing the remaining intermingled fluid minerals to development is impractical and could result in greater surface impacts due to inefficient orientation of wells to avoid federal minerals. An alternative closing just those areas with no or low potential for fluid mineral development would have a substantially similar effect to allowable uses analyzed under the action alternatives and, therefore, does not necessitate analysis of a separate alternative.

A planning decision that makes lands open to oil and gas leasing for potential future development does not foreclose other uses of the lands, given that the lands remain accessible to the public for numerous uses, and many leases are never developed. Even where development occurs, oil and gas infrastructure does not occupy the entire surface of a lease to the exclusion of other resources and uses, and the high-intensity activities associated with drilling and completion of wells are typically of short duration; the longer-term production phase usually requires minimal human activity. The BLM can also apply stipulations to oil and gas leases, such as no surface occupancy or timing limitations, to minimize conflicts with other uses, when appropriate. Thus, full closure alternatives would not resolve a specific resource conflict. The alternatives considered in the Draft RMP/EIS include a range of priorities and protections for other uses of public lands regardless of their oil and gas potential.

Public scoping comments indicated a growing level of concern with the rate and scale of oil and gas leasing and development in the planning area. In response to these concerns, various alternatives consider closing portions of the planning area or applying specific resource protections in response to specific identified resource conflicts (see Appendix A, *Fluid Minerals*).

2.1.3. Addition of the Scenic Huerfano Human Ecoregion

During the public review of the preliminary alternatives, a suggestion was made to add a fifth human ecoregion to Alternative D, encompassing the Huerfano Park, Mt. Mestas, Sangre de Christo Mountains, and Spanish Peaks areas, called the Scenic Huerfano Human Ecoregion (see section 2.3.4 for a description of ecoregions). This was considered; however, the BLM determined that despite ecological and geological differences, the human ecoregional values of the Rural Foothills landscape considered in Alternative D are sufficiently similar to those of this proposed sub-area that a separate alternative is not needed. The values of the rural foothills are related to the working landscape of the area that supports traditional uses of public lands rather than strictly ecological or geological values. This is substantially similar to areas in the northern rural foothills, specifically South Park, that the addition of the Scenic Huerfano Human Ecoregion would not have changed the management decisions in that alternative. To address concerns specific to big game habitat and wildlife related recreation in the area, Alternative D designates special recreation management areas (SRMAs) to protect and maintain high-quality hunting and fishing opportunities. Specific management actions are also considered for geologic hazards in the public health and safety section (see Appendix A, *Public Health and Safety*) and

mitigation for fluid mineral development are considered in the water resources section (see Appendix A, *Water Resources*).

2.1.4. Closure of All Public Lands to New Coal Leasing

The BLM considered an alternative closing public lands in the planning area to new leasing of federal coal, but eliminated it from further analysis. All of the alternatives propose closure of certain areas to coal leasing based on policy, legislation, or protecting resource values. Closure of large areas to coal leasing is proposed under Alternative B in recognition of other resource use priorities that would be impacted by potential development and low quality of the coal deposits. Resource values that can only be protected by prohibiting all coal leasing throughout the decision area have not been identified. Greenhouse gas emissions and associated climate change impacts were considered as a potential resource conflict; however, the full closure alternative was not carried forward because the BLM has no suitable thresholds or standards to measure and compare the significance of impacts related to greenhouse gas emissions under that alternative relative to other alternatives. In addition, the BLM has no available method to measure residual impacts after mitigation. Finally, coal leasing and extraction is an authorized use of the public lands. An alternative that prohibits coal leasing throughout the decision area would not meet part of the BLM's purpose and need for the RMP (detailed in section 1.1), specifically, to manage resources in accordance with FLPMA, which directs that the public lands be managed under principles of multiple use and sustained yield.

2.2. MANAGEMENT COMMON TO ALL ALTERNATIVES

This section describes management actions from the existing Royal Gorge Resource Area RMP and the Northeast RMP (Alternative A) that would be carried forward in all of the action alternatives (Alternatives B through D).

- Comply with all state and federal laws, regulations, policies, and standards, including the multiple use mandates of the FLPMA;
- Facilitate implementation actions (day-to-day management, monitoring, and administrative functions) that stem directly from regulations, policy, and law, and are in conformance with the RMP alternatives, but are not specifically addressed in the alternatives;
- Provide for human safety and property protection from wildfire and other natural hazards;
- Aim to sustain habitat, water, and soils in sufficient quantities and quality for viable plant, fish, and wildlife populations;
- Propose continuing to manage existing wilderness study areas (WSAs) consistently with BLM policy;

- Propose a diversity of recreation opportunities that foster outdoor-oriented lifestyles and add to people's quality of life;
- Apply best management practices (BMPs) and other site-specific mitigation (e.g., recreation guidelines) to all resource uses (Appendix C) and employ adaptive management per U.S. Department of the Interior (DOI), BLM, and tribal policy;
- Propose collaboration with adjacent landowners, federal and state agencies, communities, other agencies, and individuals and organizations, as needed, to monitor and implement decisions to achieve desired resource conditions;
- Identify, consider, and, as appropriate, require mitigation to address reasonably foreseeable impacts to resources from public land uses consistent with the mitigation hierarchy as defined in the Council on Environmental Quality (CEQ) regulations at 40 CFR 1508.20 and with Departmental and BLM policy;
- Propose monitoring for all resources to determine the success of terms, conditions, stipulations, best management practices, and compliance with applicable state and federal laws; and
- Promulgate supplementary rules to promote resource protection and protect health and safety through law enforcement of travel and other restrictions in the RMP.

2.3. GENERAL DESCRIPTIONS OF ALTERNATIVES

2.3.1. Alternative A: The No Action Alternative

Alternative A would continue current management of BLM-administered surface land and federal mineral estate in the planning area. The northern portion of the planning area is largely managed under the Northeast RMP and Record of Decision (ROD) (BLM 1986) and a subsequent oil and gas leasing amendment (BLM 1991). The southern portion of the planning area is currently managed under the Royal Gorge Resource Area RMP/ROD (BLM 1996), which was amended by five Travel Management Plans (TMPs) (BLM 2002a, BLM 2002b, BLM 2004a, BLM 2004b, BLM 2008b) and two land tenure adjustments (BLM 2002c, BLM 2009a). Both existing RMPs were amended by the *Colorado Public Land Health Standards* (BLM 1997) and programmatic amendments related to the development of wind energy (BLM 2005b), solar energy (BLM 2012b), energy corridors (BLM 2009b), and geothermal energy (BLM 2008c). The Royal Gorge Resource Area RMP/ROD was also modified through 33 maintenance actions between 1996 and 2016.

The primary goal of Alternative A within the Northeast Resource Area, as stated in the Northeast RMP/ROD, is “to increase management efficiency and reduce the costs of public land management by improving management efficiency” (BLM 1986). In pursuit of this goal, management actions emphasize transfer or disposal of BLM-administered surface lands that are

difficult or costly to manage to public or non-public entities that can manage them more efficiently.

For lands recommended for retention, the Northeast RMP/ROD identifies which resource uses are allowed (e.g., mineral development, timber harvest, or recreation) and which measures would be applied to protect or improve resource values (e.g., wildlife habitat, vegetation, or water quality). The Northeast RMP divides the Northeast Resource Area into 10 management zones based on physical features, political boundaries, land ownership patterns, and resource values. These management zones are subdivided into management units (ranging from 1 to 24 units per zone), which are the discrete areas to which land use allocations in the Northeast RMP/ROD are applied. Acreages reported in land use allocations are the aggregate acreage of each use across all management units in the Northeast Resource Area at the time the RMP/ROD was written, unless otherwise stated. Appendix A of the Northeast RMP/ROD includes maps and land use allocations specific to each management unit (BLM 1986).

The overall objective for the Royal Gorge Resource Area, as stated in the RMP/ROD, is “to provide a variety of levels, methods, and mix of multiple use resource management, utilization, and protection” (BLM 1996). Management actions for this landscape generally emphasize the conservation or enhancement of important wildlife habitats, visual resources, and dispersed recreation opportunities. Many management actions call for the development of integrated activity plans to determine the appropriate multiple-use management for lands in the Royal Gorge Resource Area; however, few integrated activity plans were prepared, and none are currently in use (BLM 2015b).

During the alternatives development process, the BLM omitted the following existing management from Alternative A: decisions that restated existing policy, referred to repealed or superseded policies or guidance, were inconsistent with current policies or guidance, were not RMP-level decisions, or were no longer relevant to current conditions in the planning area. Such decisions highlight the purpose and need for this RMP, but cannot be considered “reasonable” alternatives for purposes of comparison with the action alternatives.

2.3.2. Alternative B: Emphasis on Natural Processes

2.3.2.1. Overall Theme for Alternative B

This alternative emphasizes management of natural ecosystem function according to ecoregional assessments or other metrics. Management would focus on proactive conservation and restoration of ecoregion components to meet desired future conditions as well as the *Colorado Public Land Health Standards* (BLM 1997). Resource uses (e.g., oil and gas, recreation, ROWs, livestock grazing) would be managed adaptively as required to make long-term progress toward meeting the desired future conditions and improving resource resiliency.

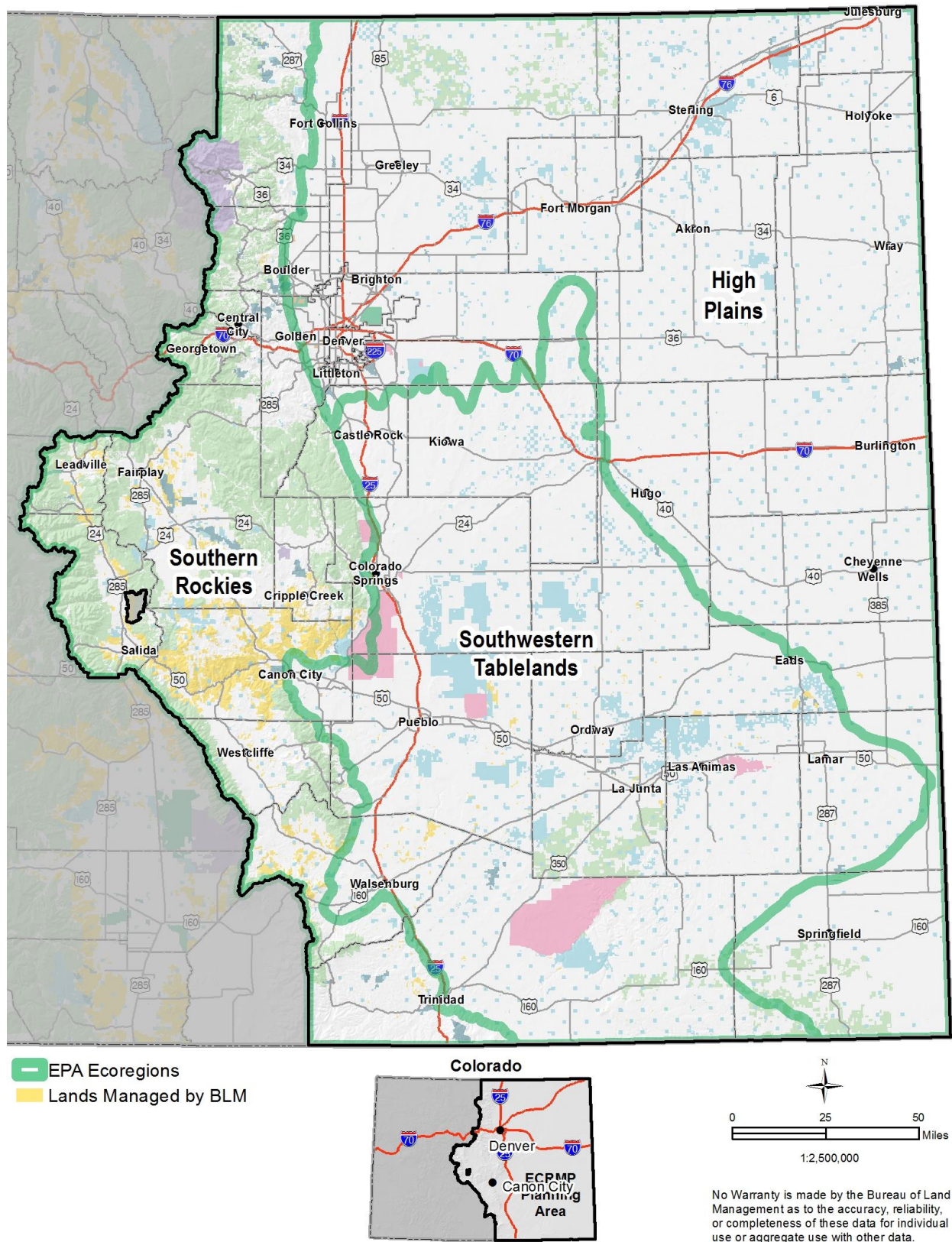
Three ecoregions (Southwestern Tablelands, High Plains, and Southern Rockies) (Figure 2.1) are within the planning area. Descriptions of the ecoregions are below.

Southwestern Tablelands: The Southwestern Tablelands Ecoregion is part of the larger Southern Great Plains Rapid Ecoregional Assessment and Great Plains Landscape Conservation Cooperative (see <https://lccnetwork.org/lcc/great-plains>). The Southwestern Tablelands within the planning area consist largely of private lands with some national grasslands and military reservations. BLM surface management is limited; however, there are some blocks of BLM-administered surface that contain important ecosystem components. In this ecoregion, the BLM would consider the ecological interaction of surrounding lands and their conservation status to try to maximize ecosystem function.

Great Plains: The Great Plains Ecoregion is also part of the larger Southern Great Plains Rapid Ecoregional Assessment and Great Plains Landscape Conservation Cooperative. The Great Plains within the planning area consist largely of private lands with some national grasslands. BLM-administered surface land is very limited; however, federal subsurface management is active. In this ecoregion, the BLM would largely consider how management of subsurface federal minerals interacts with surface management and with surrounding lands to maximize ecosystem function.

Southern Rockies: The Southern Rockies Ecoregion within the planning area is not covered by a BLM rapid ecoregional assessment; however, many organizations have assessed this ecoregion. The bulk of surface lands managed by the BLM within the planning area are located within the Southern Rockies; however, these lands are scattered, with few areas of truly large, contiguous blocks. In this ecoregion, the BLM would strive to maximize protection of larger blocks and leverage the conservation status of surrounding lands to protect the ecosystem function.

Figure 2.1. U.S. Environmental Protection Agency Level III Ecoregions in the Eastern Colorado RMP/EIS Planning Area



2.3.2.2. Landscape-level Goals

Alternative B has the following landscape-level goals for the Eastern Colorado RMP/EIS planning area:

1. Restore, maintain, protect, or improve resource condition or ecosystem function to promote ecosystem diversity, productivity, and natural processes.
2. Move toward resilient landscapes by managing resources and resource uses to maintain or establish large natural areas and maintain healthy, productive plant and animal communities of native and other desirable species; maintain and restore the distribution, diversity, and complexity of watershed and landscape scale features to ensure protection of aquatic systems to which species, populations, and communities are adapted.
3. Reduce or mitigate the effects of climate change on resources.
4. Manage the human demand for resource use while improving and prioritizing the health of ecosystems, ecosystem processes, and cultural resources.
5. Protect the integrity of unique resources and provide opportunities for compatible uses.
6. Emphasize collaboration with adjacent landowners, federal and state agencies, tribes, communities, other agencies, and other individuals and organizations as needed to attain and monitor healthy ecosystem conditions.
7. Maintain existing partnerships and develop new partnerships to inventory and monitor resource conditions.

2.3.3. Alternative C: Emphasis on Responding to Demand for Resource Use

2.3.3.1. Overall Theme for Alternative C

In this alternative, public demand for use will be the basis for resource management, and management will rely mostly on existing laws and regulations to protect the long-term sustainability of resources. Adaptive management will be used as a tool to respond to demand. Appendix C provides a detailed overview of adaptive management. The BLM will keep resources open for greater commercial use as demand dictates. The BLM will maximize accessibility to resource use to facilitate development for commercial and public use for things such as mineral extraction, grazing, ROWs, renewable energy projects, and recreation.

Under Alternative C, the landscape would be defined by the geopolitical boundaries of the State of Colorado on the north, east, and south and by the Eastern Colorado RMP/EIS planning area boundary on the west. The entire landscape would be looked at as one to develop goals, objectives, and management actions to meet the alternative theme.

2.3.3.2. Landscape-level Goals

Alternative C has the following landscape-level goals for the Eastern Colorado RMP/EIS planning area:

1. Maximize opportunities to meet current human demand for commercial resource use.
2. Maintain the long-term resiliency and conservation of resources through adaptive management and mitigation by applying restrictions as required by laws, regulations, policies, and guidance.
3. Improve availability and access for resource use to all lands not directly restricted by law, regulation, or policy.

2.3.4. Alternative D: The Human Ecoregion (Preferred Alternative)

2.3.4.1. Overall Theme for Alternative D

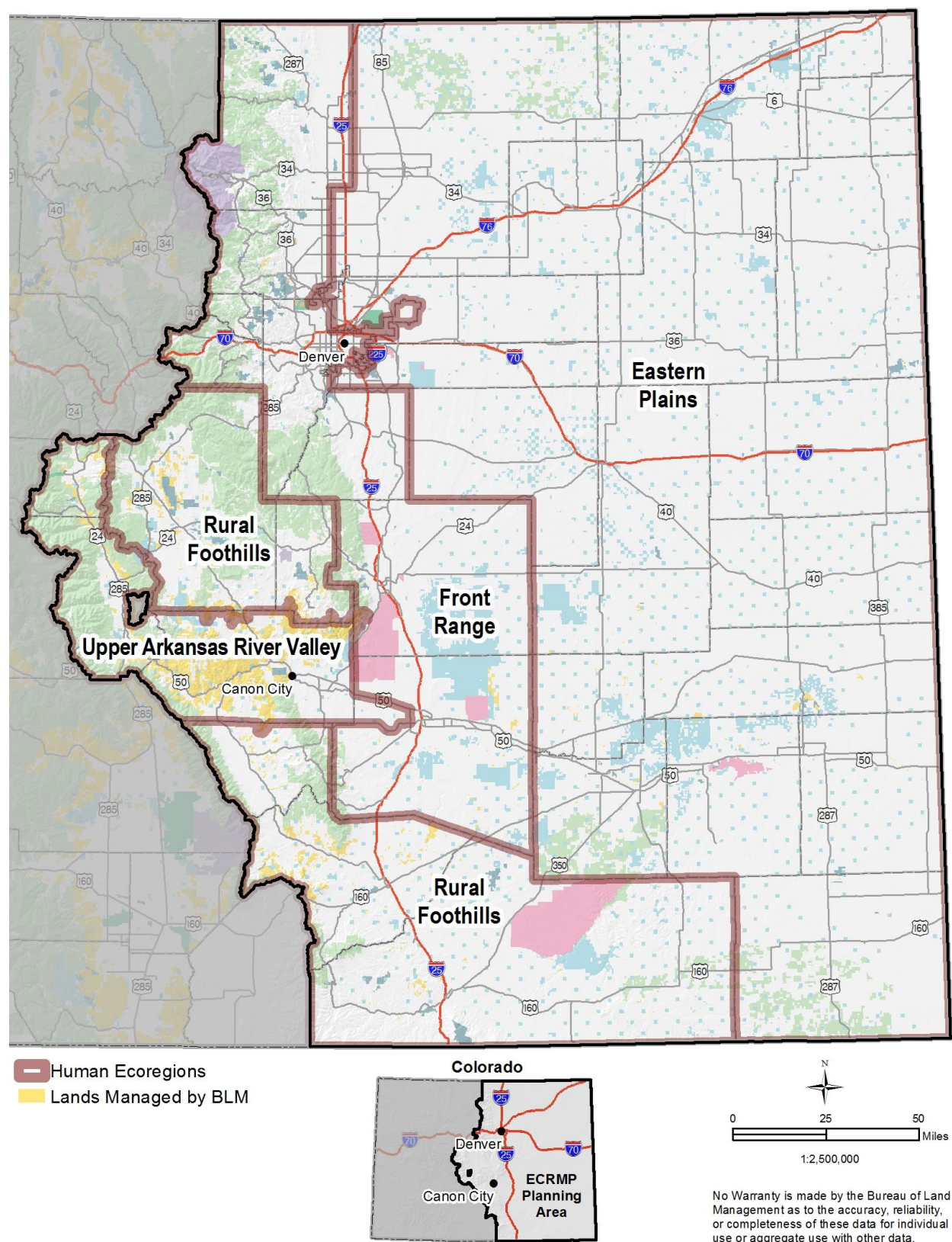
This alternative adaptively manages resources to allow for local community use and interest based on local communities' desires and based on the BLM's interactions with the public, cooperators, and feedback during pre-planning, scoping, and other forums.¹ It emphasizes managing for the ways in which local governments, people, and communities want to interact with public lands and resources. This is the BLM's preferred alternative. It maximizes the BLM's multiple use mandate and increases access to public lands by focusing on where resource potential exists and leveraging the access to those resources in a way that reflects local values. Appendix C provides a detailed overview of adaptive management. The following four landscapes (Figure 2.2) that characterize Alternative D were identified during scoping:

- Eastern Plains
- Upper Arkansas River Valley
- Rural Foothills
- Front Range

Although the goals of each region are similar, objectives and management of each region are further tailored in the different areas.

¹ The goals listed for each landscape in this alternative reflect what the BLM RGFO has heard from the public thus far; they may change with further public input. To the extent available, local land use plans or other published city/county documents have been consulted in the development of this alternative.

Figure 2.2. Alternative D Landscape Boundaries



2.3.4.2. Eastern Plains Landscape

The Eastern Plains are the rural areas east and south of the Front Range. BLM-administered surface is very limited in this area and mainly consists of small, scattered parcels; however, there is a great deal of scattered subsurface federal mineral estate in this area. In general, this area is difficult for the BLM to manage due to the fragmented land pattern, inaccessibility, and pressures from surrounding lands where small parcels are surrounded by private lands. The residents of the area generally lean toward fewer restrictions on using public lands and allowing the market to determine access to the resources (Casey 2016).

2.3.4.2.1. Landscape-level Goals

The Eastern Plains landscape has the following overall goals:

1. Maximize opportunities to meet human demand for resource use while balancing local and regional needs with BLM's mandates.
2. Within the framework of applicable laws, regulations, policies, and guidance, respond to local and regional desires for use of public lands.
3. Minimize designations that would place restrictions on development.
4. Manage wildland fire, vegetation, and fuels on BLM-administered surface land, in cooperation with adjacent landowners, in a manner that is commensurate with the values at risk and provides for firefighter and public safety.
5. Mitigate the effects of climate change or variability on resources.
6. Emphasize outreach and enhance coordination with landowners, stakeholders, local governments and communities, other agencies, tribes, and other individuals and organizations.

2.3.4.3. Upper Arkansas River Valley Landscape

The Upper Arkansas River Valley consists of small- to medium-sized communities that value public lands for their rural open spaces and support for mineral collection (Casey 2016). However, communities along the Arkansas River (i.e., Leadville, Buena Vista, Salida, and Cañon City) rely on the economic benefits associated with outdoor recreation and tend to want more developed recreational opportunities nearby or directly adjacent to town (Casey 2016).

2.3.4.3.1. Landscape-level Goals

The Upper Arkansas River Valley landscape has the following overall goals:

1. Allow opportunities to meet human demand for resource use while balancing local and regional needs with BLM's mandates.
2. Within the framework of applicable laws, regulations, policies, and guidance, respond to local and regional desires for use of public lands.
3. Special designations would be utilized primarily to balance local and regional preferences for resources with those for resource uses and to prioritize site-specific management needs within a larger landscape. Specifically, recreation area designations would be focused around communities.
4. Mitigate the effects of climate change or variability on resources.
5. Manage wildland fire, vegetation, and fuels to maintain, achieve, or exceed desired ecological and forest health conditions to create sustainable and resilient landscapes and reduce the probability of loss of life and property in the wildland-urban interface.
6. Maintain and enhance collaboration and cooperation with landowners, stakeholders, local governments and communities, other agencies, tribes, and other individuals and organizations.

2.3.4.4. Rural Foothills Landscape

The rural foothills consist of small communities and rural subdivisions where a quiet lifestyle is desired, with low populations. Public lands are valued for their largely undeveloped open space and support for hunting and fishing, the rural character of the landscape and unobstructed views, wildlife habitat, cultural resources, and the natural environment (Casey 2016).

2.3.4.4.1. Landscape-level Goals

The Rural Foothills landscape has the following overall goals:

1. Allow opportunities to meet human demand for resource use while balancing local and regional needs with BLM's mandates.
2. Within the framework of applicable laws, regulations, policies, and guidance, respond to local and regional desires for use of public lands.
3. Special designations would be utilized primarily to balance local and regional preferences for resources with those for resource uses and to prioritize site-specific management needs within a larger landscape.
4. Manage wildland fire, vegetation, and fuels to maintain, achieve, or exceed desired ecological and forest health conditions to create sustainable and resilient landscapes and reduce the probability of loss of life and property in the wildland-urban interface.

5. Mitigate the effects of climate change or variability on resources.
6. Emphasize outreach and enhance coordination with landowners, stakeholders, local governments and communities, other agencies, tribes, and other individuals and organizations.

2.3.4.5. Front Range Landscape

BLM-administered surface land is limited along the Front Range; most surface acreage is in small, isolated parcels. Most of this land is in the “backyard” of a large population where people recreate and have seen undeveloped land diminish. Public lands in this area are largely valued for their open space that gives the area a less crowded feel, water, wildlife, and viewsheds (Casey 2016).

2.3.4.5.1. Landscape-level Goals

The Front Range landscape has the following overall goals:

1. Allow opportunities to meet human demand for resource use while addressing local and regional needs with BLM’s mandates.
2. Within the framework of applicable laws, regulations, policies, and guidance, respond to local and regional desires for use of public lands.
3. Manage wildland fire, vegetation, and fuels on BLM-administered surface land, in cooperation with adjacent landowners, in a manner that is commensurate with values at risk and reduces the probability of loss of life and property in the wildland-urban interface.
4. Mitigate the effects of climate change or variability on resources.
5. Emphasize outreach and enhance coordination with landowners, stakeholders, local governments and communities, other agencies, tribes, and other individuals and organizations.

2.4. COMPARISON OF ALTERNATIVES: HIGHLIGHTS

Table 2.1 below shows highlights of the BLM’s comparison of alternatives, by program area.

See Appendix A, *Comparison of Alternatives*, for a complete and comprehensive comparison of the goals, objectives, allowable uses, and management actions for all alternatives.

Table 2.1. Highlights of Proposed Management by Alternative²

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
RESOURCES				
Air quality and climate	<ul style="list-style-type: none"> Minimize air pollution through project design. Air pollutants will be monitored by State of Colorado (Northeast RMP). Minimize air quality degradation through strict compliance with federal, state, and local regulations and implementation plans. 	<ul style="list-style-type: none"> Limit air quality and related values degradation from BLM-authorized activities by providing appropriate analyses of potential air quality impact. Assess air quality impacts through emissions inventories and modeling analyses. Attach notice of air quality requirements to new oil and gas leasing agreements. Develop conditions of approval (COAs) for surface-disturbing activities. Conduct impact analyses for proposed actions consistent with climate protection and adaptation policy. 	<ul style="list-style-type: none"> Limit air quality and related values degradation from BLM-authorized activities by providing appropriate analyses of potential air quality impact. Assess air quality impacts through emissions inventories and modeling analyses. Attach notice of air quality requirements to new oil and gas leasing agreements. Develop conditions of approval (COAs) for surface-disturbing activities. Conduct impact analyses for proposed actions consistent with climate protection and adaptation policy. 	<ul style="list-style-type: none"> Limit air quality and related values degradation from BLM-authorized activities by providing appropriate analyses of potential air quality impact. Assess air quality impacts through emissions inventories and modeling analyses. Attach notice of air quality requirements to new oil and gas leasing agreements. Develop conditions of approval (COAs) for surface-disturbing activities. Conduct impact analyses for proposed actions consistent with climate protection and adaptation policy.
Soil resources	<ul style="list-style-type: none"> Manage soil-disturbing activities to avoid soil erosion and loss of watershed values. Stipulations for other resource actions will decrease erosion and potentially enhance 	<ul style="list-style-type: none"> Maintain or restore soil erosion from upland locations over 80% of the planning area to natural rates. 	<ul style="list-style-type: none"> Maintain or restore soil erosion from upland locations over 80% of the planning area to natural rates. 	<ul style="list-style-type: none"> Maintain or restore soil erosion from upland locations over 80% of the planning area to natural rates.
		<ul style="list-style-type: none"> Protect soil during drought. 	<ul style="list-style-type: none"> Open fragile soils to fluid mineral leasing with standard 	<ul style="list-style-type: none"> Protect soil during drought.

² NOTE: This table is a summary. Please see Appendix A for a comprehensive comparison of management goals, objectives, allowable uses, and management actions across all alternatives.

³ Unless otherwise noted, management listed in this column is from the Royal Gorge Resource Area RMP.

⁴ EP – Eastern Plains Landscape; UARV – Upper Arkansas River Valley Landscape; RF – Rural Foothills Landscape; FR – Front Range Landscape

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
	watershed characteristics.	<ul style="list-style-type: none"> • Maintain or restore stream banks, riparian areas, and floodplains to a stable and functioning condition. • Prohibit surface occupancy by fluid mineral activities on fragile soils of moderate or high concern and on slopes greater than 25%. 	<p>lease stipulations.</p> <ul style="list-style-type: none"> • Restrict surface occupancy by fluid mineral activities on slopes greater than 30% and prohibit on slopes greater than 40%. 	<ul style="list-style-type: none"> • Maintain or restore stream banks, riparian areas, and floodplains to a stable and functioning condition (UARV; RF). • Restrict surface use by fluid mineral activities on fragile soils of high concern and on slopes greater than 30%.
Water resources	<ul style="list-style-type: none"> • Maintain minimum state water quality standards for all activities. 	<ul style="list-style-type: none"> • Manage water resources to meet or exceed the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management, achieve proper functioning condition (PFC), and meet Colorado water quality standards. 	<ul style="list-style-type: none"> • Manage water resources to meet or exceed the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management, achieve proper functioning condition (PFC), and meet Colorado water quality standards. 	<ul style="list-style-type: none"> • Manage water resources to meet or exceed the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management, achieve proper functioning condition (PFC), and meet Colorado water quality standards.
		<ul style="list-style-type: none"> • Prohibit surface occupancy for oil and gas activities within 500 feet (152 meters) of waterways, including wetlands, perennial water impoundments, perennial streams, fens, and wetlands. • Protect water resources during drought. • Prohibit surface occupancy for oil and gas activities within 2,641 feet (805 meters) of public groundwater supply wells. 	<ul style="list-style-type: none"> • Restrict surface occupancy for fluid mineral development on lands adjacent to perennial, intermittent, and ephemeral streams; riparian areas, fens and/or wetlands; and water impoundments. 	<ul style="list-style-type: none"> • Notify the lessee that COAs would be applied to prohibit surface occupancy for oil and gas activities within 328 feet (100 meters) of waterways, including wetlands, perennial water impoundments, perennial streams, fens, and wetlands on BLM surface lands. • Protect water resources during drought. • Restrict surface use for oil and gas activities within 2,641 feet (805 meters) of public groundwater supply wells on BLM surface lands.

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
<i>Terrestrial wildlife</i>	<ul style="list-style-type: none"> Prohibit surface occupancy for fluid mineral development in raptor nesting/fledgling habitat. Apply timing limitations (TLs) to mineral leasing and operations to protect important habitats for big game, raptors, and turkeys. 	<ul style="list-style-type: none"> Prohibit all surface-disturbing activities (including fluid mineral development) in important habitats for greater prairie chicken, plains sharp-tailed grouse, raptors, and waterfowl/shorebirds. Close State Wildlife Areas to fluid mineral leasing. Prohibit surface occupancy for fluid minerals in important habitats for big game, river otter, sandhill crane, turkey, and waterfowl/shorebirds. Restrict surface use for fluid mineral development in big game migration routes and important moose habitat. Apply TLs to protect other wildlife habitats. 	<ul style="list-style-type: none"> Restrict surface use for fluid mineral development in big game migration routes and important habitats for moose, raptors, waterfowl/shorebirds, greater prairie chicken, plains sharp-tailed grouse, sandhill crane, and turkey. Apply TLs to protect big game winter ranges and production areas, migratory birds, and other wildlife habitats. 	<ul style="list-style-type: none"> Prohibit surface occupancy for fluid minerals and avoid all other surface-disturbing activities in important habitats for plains sharp-tailed grouse on BLM surface lands. Restrict surface use for fluid mineral development in big game migration routes and important habitats for greater prairie chicken, raptors, and moose on BLM surface lands. Apply TLs or notify the lessee that COAs would be applied to protect big game winter ranges and production areas, turkey, river otter, and other wildlife habitats.
<i>Aquatic and riparian resources</i>	<ul style="list-style-type: none"> Protect streams through standard lease terms for fluid mineral development. Limit fluid mineral operations in riparian areas by controlled surface use (CSU) stipulations. Improve management with implementation of BLM guidance to maintain and/or improve current conditions in riparian zones. Achieve PFC for 75% of all riparian areas by 1997. 	<ul style="list-style-type: none"> Maintain or improve wetland and riparian resources. Maintain and/or acquire appropriate water rights for protection of wetlands (riparian vegetation, ponds, springs, playas, fens, etc.). Prohibit surface occupancy within 500 feet (152 meters) of the high water elevation of playas. Avoid new and remove existing unnecessary infrastructure within 	<ul style="list-style-type: none"> Maintain or improve wetland and riparian resources. Maintain and/or acquire appropriate water rights for protection of wetlands (riparian vegetation, ponds, springs, playas, fens, etc.). Require special design consideration for new unavoidable infrastructure in floodplains or flood prone areas. Monitor riparian and wetlands to ensure they are moving 	<ul style="list-style-type: none"> Maintain or improve wetland and riparian resources. Maintain and/or acquire appropriate water rights for protection of wetlands (riparian vegetation, ponds, springs, playas, fens, etc.). Notify the lessee that COAs would be applied to prohibit surface occupancy within 328 feet (100 meters) of the high water elevation of playas on BLM surface lands. Avoid new, and remove

Comparison of Alternatives: Highlights

Resources	Alternative A³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D⁴ Preferred Alternative (Human Ecoregion)
		<p>floodplains or flood prone areas. Require special design consideration for new unavoidable infrastructure.</p> <ul style="list-style-type: none"> • Monitor riparian and wetlands to ensure 90% of riparian areas are in at least PFC. • Adaptively manage and monitor wetlands and riparian areas to ensure they meet or exceed PFC and in areas of special designation move towards or in an advance seral stage. • Avoid authorizing ROW within 500 feet (152 meters) of streams/springs possessing lentic/lotic riparian characteristics. 	towards PFC.	<p>existing unnecessary infrastructure within floodplains or flood prone areas. Require special design consideration for new unavoidable infrastructure.</p> <ul style="list-style-type: none"> • Monitor riparian and wetlands to ensure they are moving towards or meeting PFC, and manage toward an advanced seral stage in special designation areas (UARV; RF). • Sustain or advance resource conditions to PFC for wetlands and riparian resources on lands where BLM management actions can realistically influence area resource conditions (EP; FR). • Avoid authorizing ROW within 500 feet (152 meters) of streams/springs possessing lentic/lotic riparian characteristics.

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
Vegetation	<ul style="list-style-type: none"> Manage vegetation to accomplish other BLM initiatives (e.g., riparian, wildlife); improve forage conditions through cooperative efforts (e.g., Colorado Habitat Partnership Program); manage forest lands for enhancement of other values; develop desired plant condition objectives for all integrated activity plans; and monitor vegetation on an interdisciplinary basis. 	<ul style="list-style-type: none"> Maintain or restore vegetative communities to provide soil stability and resistance to erosion. Use vegetative treatments to improve diversity, reduce noxious and invasive species, and restore native plant communities to support wildlife and livestock. Ensure that managed activities (grazing, recreation, energy development, etc.) are not leading to degraded conditions. 	<ul style="list-style-type: none"> Maximize vegetative treatments to improve diversity, reduce noxious and invasive species, and restore native plant communities to support wildlife and livestock. 	<ul style="list-style-type: none"> Maintain or restore vegetative communities to provide soil stability and resistance to erosion. Use vegetative treatments to improve diversity, reduce noxious and invasive species, and restore native plant communities to support wildlife and livestock. Ensure that managed activities (grazing, recreation, energy development, etc.) are not leading to degraded conditions.
	<ul style="list-style-type: none"> Monitor the overall trend, condition, and forage production of vegetation. 	<ul style="list-style-type: none"> Integrate resource management activities to meet the <i>Colorado Public Land Health Standards</i> (BLM 1997) to improve landscape resiliency and response to natural disturbance within high-risk landscapes. 	<ul style="list-style-type: none"> Integrate resource management activities to meet the <i>Colorado Public Land Health Standards</i> (BLM 1997) and promote economic return. 	<ul style="list-style-type: none"> Integrate resource management activities to meet the <i>Colorado Public Land Health Standards</i> (BLM 1997) to improve landscape resiliency and response to natural disturbance within high-risk landscapes (UARV; RF).
Special status species	<ul style="list-style-type: none"> Protect special status species habitat through elimination of conflicting uses. Prohibit surface occupancy for fluid minerals in nesting or breeding habitats for peregrine falcon, Mexican spotted owl, and lesser prairie chicken. Apply TLs to fluid mineral leasing and close to mineral material disposal in bald eagle winter roosting habitat and 	<ul style="list-style-type: none"> Allow land use authorizations only when they would have no effect or beneficial effects on threatened and endangered species or their habitat. Close all occupied lesser prairie chicken habitat to fluid mineral leasing. Prohibit all surface-disturbing activities (including fluid mineral development) in important habitats for bats, 	<ul style="list-style-type: none"> Allow land use authorizations only when they would not jeopardize threatened and endangered species or their habitat. Restrict surface use for fluid mineral development in important habitats for prairie dog, swift fox, black-footed ferrets, New Mexico and Preble's meadow jumping mouse, bald eagle, golden 	<ul style="list-style-type: none"> Allow land use authorizations only when they are not likely to adversely affect threatened and endangered species or their habitat. Prohibit all surface-disturbing activities (including fluid mineral development) in important habitats for special status plant species, bald eagle, and golden eagle. Prohibit surface occupancy for

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
	nesting habitat for ferruginous hawk, peregrine falcon, Mexican spotted owl, mountain plover (fluid minerals in South Park only), least tern and piping plover, and lesser prairie chicken.	prairie dogs, swift fox, black-footed ferret, New Mexico and Preble's meadow jumping mouse, special status plant species, bald eagle, golden eagle, northern goshawk, ferruginous hawk, peregrine falcon, Mexican spotted owl, long-billed curlew, white-faced ibis, least tern, piping plover, western snowy plover, yellow-billed cuckoo, southwestern willow flycatcher, lesser prairie chicken, special status amphibian and snake species, Pawnee montane skipper, and Uncompahgre fritillary butterfly. <ul style="list-style-type: none"> • Apply TLs to protect American white pelican, golden eagle, burrowing owl, mountain plover, and lesser prairie chicken. • Do not allow commercial timber harvest treatments in Canada Lynx Analysis Units. 	eagle, northern goshawk, ferruginous hawk, peregrine falcon, Mexican spotted owl, long-billed curlew, white-faced ibis, least tern, piping plover, western snowy plover, yellow-billed cuckoo, southwestern willow flycatcher, lesser prairie chicken, special status amphibian and snake species, Pawnee montane skipper, and Uncompahgre fritillary butterfly. <ul style="list-style-type: none"> • Apply TLs to protect bats, American white pelican, bald eagle, golden eagle, ferruginous hawk, peregrine falcon, burrowing owl, Mexican spotted owl, mountain plover, least tern, piping plover, western snowy plover, and lesser prairie chicken. 	fluid minerals in important habitats for prairie dog, black-footed ferret, northern goshawk, ferruginous hawk, peregrine falcon, Mexican spotted owl, and lesser prairie chicken. <ul style="list-style-type: none"> • Restrict surface use for fluid mineral development in important habitats for New Mexico and Preble's jumping mouse, Mexican spotted owl, long-billed curlew, white-faced ibis, least tern, piping plover, western snowy plover, yellow-billed cuckoo, southwestern willow flycatcher, special status amphibian and snake species, Pawnee montane skipper, and Uncompahgre fritillary butterfly. • Apply TLs or notify the lessee that COAs would be applied to protect bats, swift fox, New Mexico and Preble's jumping mouse, American white pelican, bald eagle, golden eagle, burrowing owl, mountain plover, least tern, piping plover, western snowy plover, and lesser prairie chicken. • Manage timber harvest in Canada Lynx Analysis Units consistent with current guidance.

Resources	Alternative A³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D⁴ Preferred Alternative (Human Ecoregion)
<i>Wildland fire and fuel management</i>	<ul style="list-style-type: none"> • Use prescribed fire and prescribed natural fire as management tools to enhance resources. 	<ul style="list-style-type: none"> • Implement a variety of fuel and vegetative treatments to improve ecological conditions and reduce the risk of large fires. • Manage fire to maintain, achieve, or exceed desired ecological and forest health conditions. 	<ul style="list-style-type: none"> • Implement a variety of fuel and vegetative treatments to protect the wildland urban interface and high-risk landscapes. • Prioritize treatments that have synergies for resources such as range, wildlife, and forestry products for increased economic activity. 	<ul style="list-style-type: none"> • Implement a variety of fuel and vegetative treatments to protect the wildland urban interface and high-risk landscapes, as well as improve forest and ecosystem health (UARV; RF). • Implement fuel and vegetative treatments in cooperation with adjacent landowners or cooperating agencies (EP; FR). • Prioritize treatments that have synergies for resources such as range, wildlife, and forestry products (EP; UARV; RF) in cooperation with landowners.

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
Cultural resources	<ul style="list-style-type: none"> Retain identified potential and listed National Register of Historic Places (NRHP) sites in BLM administration. 	<ul style="list-style-type: none"> Notify the lessee that COAs would be applied to restrict surface occupancy or use on BLM-administered surface lands for oil and gas activities due to historic properties and/or resources protected under the National Historic Preservation Act of 1966, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other statutes and executive orders. Retain lands with cultural resources of regional or national significance in federal ownership. 	<ul style="list-style-type: none"> Notify the lessee that COAs would be applied to restrict surface occupancy or use on BLM-administered surface lands for oil and gas activities due to historic properties and/or resources protected under the National Historic Preservation Act of 1966, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other statutes and executive orders. Retain lands with cultural resources of regional or national significance in federal ownership. 	<ul style="list-style-type: none"> Notify the lessee that COAs would be applied to restrict surface occupancy or use on BLM-administered surface lands for oil and gas activities due to historic properties and/or resources protected under the National Historic Preservation Act of 1966, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other statutes and executive orders. Retain lands with cultural resources of regional or national significance in federal ownership.
		<ul style="list-style-type: none"> Prohibit surface occupancy or use for oil and gas activities on lands within 328 feet (100 meters) from the boundary of all sites eligible for the NRHP. 	<ul style="list-style-type: none"> Prohibit surface occupancy or use for oil and gas activities on lands within 328 feet (100 meters) from the boundary of all sites eligible for the NRHP. 	<ul style="list-style-type: none"> Notify the lessee that COAs would be applied to prohibit surface occupancy or use on BLM-administered surface lands for oil and gas activities on lands within 328 feet (100 meters) from the boundary of all sites eligible for the NRHP.
		<ul style="list-style-type: none"> Close to fluid mineral leasing with a 0.5-mile (0.8-kilometer) protection area from the following nationally or regionally significant sites: Site 5PW48, the Grenada Relocation 	<ul style="list-style-type: none"> Prohibit surface occupancy for fluid mineral development with a 0.5-mile (0.8-kilometer) protection area from the following nationally or regionally significant sites: Site 5PW48, the Grenada 	<ul style="list-style-type: none"> Prohibit surface occupancy for fluid mineral development with a 0.5-mile (0.8-kilometer) protection area from the following nationally or regionally significant sites: Site 5PW48, the Grenada

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		Center (Amache); Site 5MR994.1 (Overland trail); Site 5HF2297, Our Lady of the Caves Grotto; and newly discovered sites of national or regional significance.	Relocation Center (Amache); Site 5MR994.1 (Overland trail); Site 5HF2297, Our Lady of the Caves Grotto; and newly discovered sites of national or regional significance.	Relocation Center (Amache); Site 5MR994.1 (Overland trail); Site 5HF2297, Our Lady of the Caves Grotto; and newly discovered sites of national or regional significance.
<i>Tribal uses and interests</i>	<ul style="list-style-type: none"> • No similar action. 	<ul style="list-style-type: none"> • Protect and allow access to known ecological landscapes and the culturally sensitive locations within them. Uphold Native American trust responsibilities, accommodate traditional uses, and maintain and improve, where possible, natural and cultural conditions to enhance opportunities for tribal use of cultural landscapes and cultural properties. • Under the auspices of the Section 110 program, actively seek out ecological landscapes and the culturally sensitive locations within them in collaboration with tribes. • Close to fluid mineral leasing with a 0.5-mile (0.8-kilometer) protection area from the following culturally sensitive locations: the Sand Creek Massacre National Historic Site; Site 5LO101 (Peavey Rockshelter); Site 5PA1300; Site 5PA718 (the 	<ul style="list-style-type: none"> • Protect and allow access to known ecological landscapes and the culturally sensitive locations within them. Uphold Native American trust responsibilities, accommodate traditional uses, and maintain and improve, where possible, natural and cultural conditions to enhance opportunities for tribal use of cultural landscapes and cultural properties. • Under the auspices of the Section 110 program, actively seek out ecological landscapes and the culturally sensitive locations within them in collaboration with tribes. • Close to fluid mineral leasing with a 0.5-mile (0.8-kilometer) protection area from the following culturally sensitive locations: the Sand Creek Massacre National Historic Site; Site 5LO101 (Peavey Rockshelter); Site 5PA1300; Site 5PA718 (the White Buffalo Site); and Site 5FN2387. 	<ul style="list-style-type: none"> • Protect and allow access to known ecological landscapes and the culturally sensitive locations within them. Uphold Native American trust responsibilities, accommodate traditional uses, and maintain and improve, where possible, natural and cultural conditions to enhance opportunities for tribal use of cultural landscapes and cultural properties. • Under the auspices of the Section 110 program, actively seek out ecological landscapes and the culturally sensitive locations within them in collaboration with tribes. • Close to fluid mineral leasing with a 0.5-mile (0.8-kilometer) protection area from the following culturally sensitive locations: the Sand Creek Massacre National Historic Site; Site 5LO101 (Peavey Rockshelter); Site 5PA1300; Site 5PA718 (the White Buffalo Site); and Site 5FN2387.

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		White Buffalo Site); and Site 5FN2387. <ul style="list-style-type: none"> Prohibit surface occupancy or use from oil and gas activities on lands within 328 feet (100 meters) of the boundary of significant eligible cultural resources, culturally sensitive locations, listed NRHP sites/districts, outstanding cultural resources to be nominated to the NRHP. 	<ul style="list-style-type: none"> Prohibit surface occupancy or use from oil and gas activities on lands within 328 feet (100 meters) of the boundary of significant eligible cultural resources, culturally sensitive locations, listed NRHP sites/districts, outstanding cultural resources to be nominated to the NRHP. 	<ul style="list-style-type: none"> Notify the lessee that COAs would be applied to prohibit surface occupancy or use from oil and gas activities on BLM-administered surface lands within 328 feet (100 meters) of the boundary of significant eligible cultural resources, culturally sensitive locations, listed NRHP sites/districts, outstanding cultural resources to be nominated to the NRHP.
Paleontological resources	<ul style="list-style-type: none"> Retain PFYC 4 and 5 paleontological resources located in ACECs in public ownership. Provide conservation of PFYC 4 and 5 paleontological resources through ACEC designation. 	<ul style="list-style-type: none"> Preserve and protect scientifically important paleontological resources through inventory and permitted research so that the BLM can make informed decisions about the resource. Establish a plan for inventory and monitoring of paleontological resources. Establish a program of outreach and education to increase public awareness focusing on partnerships with communities nearest our highest density of paleontological resources. 	<ul style="list-style-type: none"> Preserve and protect scientifically important paleontological resources through inventory and permitted research so that the BLM can make informed decisions about the resource. Establish a plan for inventory and monitoring of paleontological resources. Establish a program of outreach and education to increase public awareness focusing on partnerships with communities nearest our highest density of paleontological resources. 	<ul style="list-style-type: none"> Preserve and protect scientifically important paleontological resources through inventory and permitted research so that the BLM can make informed decisions about the resource. Establish a plan for inventory and monitoring of paleontological resources. Establish a program of outreach and education to increase public awareness focusing on partnerships with communities nearest our highest density of paleontological resources.
		<ul style="list-style-type: none"> Retain lands with paleontological resource values (PFYC 4 and 5) in federal ownership. 	<ul style="list-style-type: none"> Retain lands with known paleontological resources in federal ownership. 	<ul style="list-style-type: none"> Retain lands with paleontological resource values (PFYC 4 and 5) in federal ownership.
		<ul style="list-style-type: none"> Prohibit surface occupancy 	<ul style="list-style-type: none"> No similar action. 	<ul style="list-style-type: none"> Notify the lessee that COAs

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		on areas of moderate to high potential paleontological resources PFYC 3 through 5 (BLM-administered surface land only).		would be applied to prohibit surface occupancy for oil and gas activities on BLM-administered surface lands within 328 feet (100 meters) from the boundary of known scientifically important paleontological resources (BLM-administered surface land only).
<i>Visual resources</i>	<ul style="list-style-type: none"> Visual Resource Management (VRM) class criteria will be used as a guide for other resource management actions. <ul style="list-style-type: none"> VRM I = WSAs (68,300 acres) VRM II = 166,800 acres VRM III = 328,100 acres VRM IV = 59,500 acres 	<ul style="list-style-type: none"> Manage visual resources on BLM lands according to the objectives for each class and designate VRM Class as follows: <ul style="list-style-type: none"> VRM I = WSAs (68,300 acres) VRM II = 473,200 acres VRM III = 72,900 acres VRM IV = 43,800 acres 	<ul style="list-style-type: none"> Manage visual resources on BLM lands according to the objectives for each class and designate VRM Class as follows: <ul style="list-style-type: none"> VRM I = WSAs (68,300 acres) VRM II = 391,500 acres VRM III = 137,700 acres VRM IV = 60,700 acres 	<ul style="list-style-type: none"> Manage visual resources on BLM lands according to the objectives for each class and designate VRM Class as follows: <ul style="list-style-type: none"> VRM I = WSAs (68,300 acres) VRM II = 467,000 acres VRM III = 75,100 acres VRM IV = 47,900 acres
	<ul style="list-style-type: none"> Apply a CSU stipulation to fluid mineral leasing in VRM Class II areas outside ACECs. 	<ul style="list-style-type: none"> Require special design, construction, and implementation measures, including relocation of operations by more than 656 feet (200 meters), in VRM Class II and III areas to protect the quality of the scenic values as needed on BLM-administered surface lands. 	<ul style="list-style-type: none"> No similar action. 	<ul style="list-style-type: none"> Require special design, construction, and implementation measures, including relocation of operations by more than 656 feet (200 meters), in VRM Class II and III areas to protect the quality of the scenic values as needed on BLM-administered surface lands (UARV; RF).
<i>Lands with wilderness characteristics</i>	<ul style="list-style-type: none"> No lands are currently managed for wilderness characteristics. 	<ul style="list-style-type: none"> Manage 64,300 acres for the protection of wilderness characteristics as a priority over other multiple uses in the following areas: Badger 	<ul style="list-style-type: none"> Emphasize other multiple uses as a priority over protecting wilderness characteristics on 189,300 acres. 	<ul style="list-style-type: none"> Manage 1,300 acres emphasizing other multiple uses while applying management restrictions (e.g., conditions of use, mitigation

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		<p>Creek South, Bear Mountain, Copper Gulch, Crown Point, East Pierce Gulch, Echo Canyon, North of Steel Bridge, North Badger Creek, Pierce Gulch, Sheep Basin, Turkey Creek, and War Dance Mine.</p> <ul style="list-style-type: none"> Manage 125,000 acres emphasizing other multiple uses while applying management restrictions (conditions of use, mitigation measures) to reduce impacts to wilderness characteristics in the following areas: Badito Cone North, BH Subdivision, Ruby Mountain, Bull Domingo West, Chess Subdivision Access, Cooper Mountain, Crampton Mountain, Cucharas Canyon, Dead Mule, Dry Creek Canyon, East Fork, East McCoy Gulch, Race Path, East of Steel Bridge, Eightmile Mountain, Hellgateway North, Horseshoe Mountain, Horseshoe Mountain 2, Iron Mountain, Little Fountain Creek, Marsh Gulch, North Bear Gulch, North Coaldale/Cotopaxi, North East Phantom Canyon Road, North Hondo, Northwest corner of Beaver Creek 		<p>measures) to reduce impacts to wilderness characteristics in the following areas (UARV): Crown Point, East Pierce Gulch, Pierce Gulch, and Sheep Basin.</p> <ul style="list-style-type: none"> Emphasize other multiple uses as a priority over protecting wilderness characteristics on 188,000 acres. Manage these 1,300 acres with wilderness characteristics as ROW avoidance areas, no surface occupancy (NSO) for fluid mineral leasing, and as VRM II.

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		<p>WSA, Railroad Gulch, Red Rock Subdivision, Southeast Phantom Canyon, Stanley Creek, Suzie's Ridge, Texas Creek South, Red Canyon, Waugh Mountain, Westfall Gulch, and West of Beaver Creek WSA.</p> <ul style="list-style-type: none"> Manage these lands with wilderness characteristics as ROW exclusion areas, closed to fluid mineral leasing, closed to non-energy leasable mineral use, and as VRM II. 		
RESOURCE USES				
Recreation	<ul style="list-style-type: none"> Continue to intensively manage recreation (SRMAs) on the lands along the Arkansas River and the Gold Belt Tour Area. Manage lands outside the SRMAs as an Extensive Recreation Management Area (ERMA). Continue prohibiting target shooting on 16,800 acres identified in previous target shooting orders. 	<ul style="list-style-type: none"> Designate the following SRMAs on 31,900 acres: Arkansas River, Guffey Gorge, Phantom Canyon, and Shelf Road. Designate the following areas as ERMAs on 28,800 acres: Cache Creek, Fourmile, Oil Well Flats, Penrose Commons, Salida Trails, Seep Springs, South Cañon, and Texas Creek. Manage 63,400 acres as BCAs to protect wildlife habitat and provide outstanding hunting and fishing opportunities: Badito, Cottonwood, Crampton Mountain, Deadmans Hill, Hammond, James Mark Jones Area, Mount Mestas, 	<ul style="list-style-type: none"> Designate the following SRMAs on 31,900 acres: Arkansas River, Guffey Gorge, Phantom Canyon, and Shelf Road. Designate the Salida Trails ERMA on 4,600 acres. Do not designate BCAs. Continue prohibiting target shooting on the 16,800 acres identified in previous target shooting orders. 	<ul style="list-style-type: none"> Designate the following SRMAs on 72,900 acres (UARV; RF): Arkansas River, Cache Creek, Guffey Gorge, Fourmile, Gold Belt, Penrose Commons, Phantom Canyon, Royal Gorge, Salida Trails, and Texas Creek. Manage 87,300 acres as SRMAs with targeted hunting and fishing objectives to enhance wildlife habitat and provide outstanding hunting and fishing opportunities (UARV; RF): Big Hole, Cooper Mountain, Cottonwood, Deer Haven, James Mark Jones Area, Rye Slough, Stanley Creek, and Wormer Gulch. Do not designate ERMAs.

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		<p>North Huerfano, Oak Creek, Point of Rocks, Red Hill, Rye Slough, Silver Mountain, Wolf Springs, and Wormer Gulch.</p> <ul style="list-style-type: none"> Continue prohibiting target shooting on the 16,800 acres identified in previous target shooting orders. Prohibit target shooting on an additional 35 acres in Garden Park. 		<ul style="list-style-type: none"> Do not designate BCAs. Continue prohibiting target shooting on 16,800 acres identified in previous target shooting orders. Prohibit target shooting on all BLM-administered lands in Boulder County (2,300 acres).
Livestock grazing	<ul style="list-style-type: none"> Exclude grazing from developed recreation sites and potential NRHP sites if conflicts occur. Close Mosquito Pass and a portion of Beaver Creek ACEC to grazing. Adjust grazing use by allotment on a case-by-case basis based on monitoring studies and inventory data. 	<ul style="list-style-type: none"> Close active allotments to livestock grazing where livestock grazing conflicts with other resources (56,900 acres). Close 39,500 acres of inactive grazing allotments or unallotted areas. Adjust grazing use by allotment on a case-by-case basis to achieve resource objectives to improve ecosystem health and reduce conflict with other resources. 	<ul style="list-style-type: none"> Open all allotments and unallotted areas to livestock grazing. Adjust grazing use by allotment on a case-by-case basis to achieve the greatest forage value for livestock. 	<ul style="list-style-type: none"> Open all allotments and unallotted areas to livestock grazing. Resolve conflicts on all allotments using alternative methods. Adjust grazing use by allotment on a case-by-case basis to achieve resource objectives and reduce conflict with other resource uses.

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
Forestry	<ul style="list-style-type: none"> • Manage commercial forests and operable woodlands to enhance special status animal habitat. • Manage productive forested lands for sustained yield. 	<ul style="list-style-type: none"> • Apply density management treatments to improve diversity, health, and resiliency of forested landscapes with the primary purpose of ecosystem function. • Provide forest products as a secondary benefit to ecological function goals. 	<ul style="list-style-type: none"> • Utilize public demand for forest product use to improve hunting, grazing, fuels management, and wildlife habitat. Prioritize treatments, which promote landscape-scale horizontal diversity. • Provide forest products, including but not limited to sawlogs, firewood, Christmas trees, posts and poles, transplants, biomass and other special forest products by managing productive forest and low productivity woodlands. 	<ul style="list-style-type: none"> • Improve forest ecosystem health and diversity through appropriate silvicultural practices. • Provide forest products, including but not limited to sawlogs, firewood, Christmas trees, posts and poles, transplants, specialty wood products, and biomass by managing productive forest and low productivity woodland.
		<ul style="list-style-type: none"> • Prioritize the active use of forest products to improve and maintain forest ecosystem health and function. 	<ul style="list-style-type: none"> • Prioritize the active use of forest products to address and meet public demand. 	<ul style="list-style-type: none"> • Prioritize the active use of forest products to improve and maintain forest ecosystem health and function.
Fluid minerals	<ul style="list-style-type: none"> • Manage fluid mineral leasing on federal mineral estate outside of South Park as: <ul style="list-style-type: none"> ○ 66,800 acres closed ○ 80,800 acres NSO ○ 253,900 acres CSU ○ 476,800 acres TL ○ 2,120,500 acres open under Standard Terms and Conditions • Manage fluid mineral leasing on federal mineral estate inside of South Park as: <ul style="list-style-type: none"> ○ 1,600 acres NSO 	<ul style="list-style-type: none"> • Manage fluid mineral leasing on federal mineral estate outside of South Park as: <ul style="list-style-type: none"> ○ 322,500 acres closed ○ 2,101,600 acres NSO ○ 5,800 acres CSU ○ 170,600 acres TL ○ 0 acres open under Standard Terms and Conditions • Manage fluid mineral leasing on federal mineral estate inside of South Park as: <ul style="list-style-type: none"> ○ 11,100 acres closed ○ 152,400 acres NSO 	<ul style="list-style-type: none"> • Manage fluid mineral leasing on federal mineral estate outside of South Park as: <ul style="list-style-type: none"> ○ 67,000 acres closed ○ 229,700 acres NSO ○ 647,000 acres CSU ○ 2,298,000 acres TL ○ 0 acres open under Standard Terms and Conditions • Manage fluid mineral leasing on federal mineral estate inside of South Park as: <ul style="list-style-type: none"> ○ 2,700 acres closed ○ 15,700 acres NSO ○ 262,600 acres CSU 	<ul style="list-style-type: none"> • Manage fluid mineral leasing on federal mineral estate outside of South Park as: <ul style="list-style-type: none"> ○ 67,000 acres closed ○ 247,900 acres NSO ○ 367,700 acres CSU ○ 710,500 acres TL ○ 1,530,300 acres open under Standard Terms and Conditions • Manage fluid mineral leasing on federal mineral estate inside of South Park as: <ul style="list-style-type: none"> ○ 2,700 acres closed ○ 79,000 acres NSO

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
		<ul style="list-style-type: none"> ○ 117,500 acres CSU ○ 117,500 acres TL 	<ul style="list-style-type: none"> ○ 262,600 acres TL 	<ul style="list-style-type: none"> ○ 40,600 acres CSU ○ 145,400 acres TL
Solid minerals	<ul style="list-style-type: none"> • Close 348,300 acres of federal mineral estate to all mineral material disposal. • Close 66,800 acres of federal mineral estate to solid mineral leasing. • Recommend withdrawal of 355,500 acres of federal mineral estate from locatable mineral entry. 	<ul style="list-style-type: none"> • Close 223,000 acres of federal mineral estate to all mineral material disposal. • Close 40,000 acres of federal mineral estate to commercial mineral material disposal. • Close 279,300 acres of federal mineral estate to solid mineral leasing. • Recommend withdrawal of 2,900 acres of federal mineral estate from locatable mineral entry. 	<ul style="list-style-type: none"> • Close 66,600 acres of federal mineral estate to mineral material disposal. • Make all federal mineral estate open to commercial mineral material disposal. • Close 66,600 acres of federal mineral estate to solid mineral leasing. • Do not recommend any additional withdrawals of federal mineral estate from locatable mineral entry. 	<ul style="list-style-type: none"> • Close 66,600 acres of federal mineral estate to mineral material disposal. • Close 101,400 acres of federal mineral estate to commercial mineral material disposal. • Recommend withdrawal of 2,900 acres of federal mineral estate from locatable mineral entry.
Coal	<ul style="list-style-type: none"> • Make 97,440 acres of federal mineral estate available for surface coal mining. 	<ul style="list-style-type: none"> • Make 99,000 acres of federal mineral estate available for surface coal mining. • Make 153,700 acres of federal mineral estate available for underground coal mining. 	<ul style="list-style-type: none"> • Make 100,200 acres of federal mineral estate available for surface coal mining. • Make 323,300 acres of federal mineral estate available for underground coal mining. 	<ul style="list-style-type: none"> • Make 95,400 acres of federal mineral estate available for surface coal mining. • Make 323,300 acres of federal mineral estate available for underground coal mining.
Renewable energy	<ul style="list-style-type: none"> • Manage renewable energy resources in accordance with programmatic amendments related to the development of wind energy (BLM 2005b), solar energy (BLM 2012b), energy corridors (BLM 2009b), and geothermal energy (BLM 2008c). 	<ul style="list-style-type: none"> • Exclude utility scale renewable energy development on all 658,200 acres of BLM-administered surface land. Exclude non-utility scale renewable energy projects on 468,800 acres. 	<ul style="list-style-type: none"> • Exclude utility scale renewable energy development on 83,500 acres. Exclude non-utility scale renewable energy projects on 103,300 acres. 	<ul style="list-style-type: none"> • Exclude utility scale renewable energy development on 313,500 acres. Exclude non-utility scale renewable energy projects on 189,000 acres.

Resources	Alternative A³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D⁴ Preferred Alternative (Human Ecoregion)
<i>Travel and transportation management</i>	<ul style="list-style-type: none"> • Provide access to BLM-administered lands primarily by county roads. • Manage certain areas as limited to motorized travel to protect resources (e.g., riparian areas, ACECs) or on a site-by-site basis as the need arises. • Maintain a comprehensive transportation plan and update when needed to facilitate public access and administrative monitoring. 	<ul style="list-style-type: none"> • Establish a logical, well-managed route network that provides for public access needs in balance with impacts to other resources. • Close 131,800 acres to motorized travel (except over-snow). Manage 526,400 acres as limited and 0 acres as open to motorized travel. • Close 141,000 acres to over-snow motorized travel. Manage 517,200 acres as limited and 0 acres as open to over-snow motorized travel. • Prioritize travel management decisions in areas where impacts to resources have been identified. 	<ul style="list-style-type: none"> • Establish a logical, well-managed route network that provides for public access needs in balance with impacts to other resources. • Close 68,300 acres to motorized travel (except over-snow). Manage 589,900 acres as limited and 0 acres as open to motorized travel. • Close 68,300 acres to over-snow motorized travel. Manage 50,300 acres as limited and 539,600 acres as open to over-snow motorized travel. • Prioritize TMP development in areas where user conflicts, impact to resources, and public demand for access have been identified. 	<ul style="list-style-type: none"> • Establish a logical, well-managed route network that provides for public access needs in balance with impacts to other resources. • Close 68,300 acres to motorized travel (except over-snow). Manage 589,900 acres as limited and 0 acres as open to motorized travel. • Close 68,300 acres to over-snow motorized travel. Manage 567,700 acres as limited and 22,100 acres as open to over-snow motorized travel. • Prioritize TMP development or travel management decisions in areas where user conflicts, impact to resources, and public demand for access have been identified (EP; FR).
<i>Lands and realty</i>	<ul style="list-style-type: none"> • Exclude ROWs from 86,200 acres. Avoid ROWs on 389,200 acres in big game birthing and critical winter habitat, VRM Class II areas, ACECs, and developed recreation sites. Areas outside of exclusion and avoidance areas may be available for ROWs. • Manage WVEC consistent with existing plans, policies, and court decisions. • Identify 81,000 acres for 	<ul style="list-style-type: none"> • Prohibit surface occupancy or use by fluid mineral development within reservoir and railroad ROWs. • Apply terms and conditions to land use authorizations to ensure development and operation occur in an environmentally responsible manner. • Prioritize land tenure adjustments to enhance ecosystem conditions. 	<ul style="list-style-type: none"> • Prohibit surface occupancy or use by fluid mineral development within reservoir and railroad ROWs. • Apply the minimum amount of terms and conditions necessary to land use authorizations to meet demand. • Exclude ROWs and 43 CFR 2920 authorizations from 68,300 acres. Avoid ROWs and authorizations on 65,700 acres. Manage the remaining public lands as suitable for 	<ul style="list-style-type: none"> • Prohibit surface occupancy or use by fluid mineral development within reservoir and railroad ROWs. • Provide for land use authorizations to meet resource and community needs. • Exclude ROWs and 43 CFR 2920 authorizations from 68,300 acres. Avoid ROWs and authorizations on 240,200 acres. Manage the remaining public lands as suitable for

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
	disposal.	<ul style="list-style-type: none"> Exclude ROWs and 43 CFR 2920 authorizations from 257,300 acres. Avoid ROWs and authorizations on 294,800 acres. Manage the remaining public lands as suitable for consideration for land use authorizations. Delete the corridor of concern WVEC 87-277. Identify 34,100 acres for disposal. 	<p>consideration for land use authorizations.</p> <ul style="list-style-type: none"> Retain the existing width and alignment of WVEC 87-277. Identify 60,000 acres for disposal. 	<p>consideration for land use authorizations.</p> <ul style="list-style-type: none"> Adjust WVEC 87-277 by varying widths and alignments to avoid impacts to various resources (UARV). Identify 0 acres for disposal.
SPECIAL DESIGNATIONS				
Areas of critical environmental concern	<ul style="list-style-type: none"> Designate all or portions of the Browns Canyon, Mosquito Pass, Grape Creek, Arkansas Canyonlands, Droney Gulch, Garden Park, Phantom Canyon, Beaver Creek, and Cucharas Canyon as ACECs and manage them to protect and enhance their special values (69,500 acres). 	<ul style="list-style-type: none"> Designate the following ACECs (101,100 acres): <ul style="list-style-type: none"> Arkansas Canyonlands Cucharas Canyon Droney Gulch Garden Park Grape Creek Ruby Mountain/Railroad Gulch South Pikes Peak Top of the World 	<ul style="list-style-type: none"> Designate the following ACECs (34,800 acres): <ul style="list-style-type: none"> Arkansas Canyonlands Cucharas Canyon Garden Park Grape Creek Phantom Canyon Top of the World 	<ul style="list-style-type: none"> Designate the following ACECs (46,300 acres): <ul style="list-style-type: none"> Arkansas Canyonlands Castle Gardens Cucharas Canyon Droney Gulch Garden Park Grape Creek Phantom Canyon Top of the World
National and state scenic and historic byways	<ul style="list-style-type: none"> No similar action. 	<ul style="list-style-type: none"> Restrict surface use for fluid mineral development within 0.5 mile (0.8 kilometer) of byways. Avoid ROWs within 0.5 mile (0.8 kilometer) of byways. Do not designate new BLM backcountry byways. 	<ul style="list-style-type: none"> Through subsequent plan amendments, develop new backcountry byways in collaboration with local communities, interested publics, and tribes to promote tourism and enhance the local economy. 	<ul style="list-style-type: none"> Restrict surface use for fluid mineral development on BLM surface land within 0.5 mile (0.8 kilometer) of byways. Avoid ROWs within 0.5 mile (0.8 kilometer) of byways. Through subsequent plan amendments, designate new backcountry byways after a complete analysis of the impacts of increased visitor

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
				use to remote areas, in collaboration with local, state government, conservation groups, and other interested public (UARV; RF).
<i>National trails</i>	<ul style="list-style-type: none"> No similar action. 	<ul style="list-style-type: none"> Enhance, promote, and protect the scenic, natural, and cultural resource values associated with current and future designated national scenic, historic, and recreation trails. Manage all national trails as ROW avoidance areas within 0.5 mile (0.8 kilometer) of the trail centerline. 	<ul style="list-style-type: none"> Enhance, promote, and protect the scenic, natural, and cultural resource values associated with current and future designated national scenic, historic, and recreation trails. Manage all national trails as ROW avoidance areas within 0.5 mile (0.8 kilometer) of the trail centerline. 	<ul style="list-style-type: none"> Enhance, promote, and protect the scenic, natural, and cultural resource values associated with current and future designated national scenic, historic, and recreation trails. Manage all national trails as ROW avoidance areas within 0.5 mile (0.8 kilometer) of the trail centerline.
		<ul style="list-style-type: none"> Prohibit surface occupancy and use for fluid mineral development within 0.5 mile (0.8 kilometer) of the centerline of designated national trails. Restrict surface occupancy and use for fluid mineral development from 0.5 mile to 5 miles (0.8 kilometer to 8 kilometers) of the centerline of designated national trails. 	<ul style="list-style-type: none"> Prohibit surface occupancy and use for fluid mineral development within 164 feet (50 meters) of the centerline of designated national trails. Restrict surface occupancy and use for fluid mineral development from 164 feet (50 meters) to 5 miles (0.2 kilometer to 8 kilometers) of the centerline of designated national trails. 	<ul style="list-style-type: none"> Restrict surface occupancy and use for fluid mineral development on BLM surface land within 0.5 mile (0.8 kilometer) of the centerline of designated national trails.
<i>Wild and scenic rivers</i>	<ul style="list-style-type: none"> Arkansas River Segments 1-4 and Beaver Creek are suitable for inclusion in the National Wild and Scenic Rivers System (NWSRS). All streams that are eligible or suitable for inclusion into the NWSRS are managed under 	<ul style="list-style-type: none"> Determine 19 eligible Wild and Scenic River (WSR) segments as suitable for inclusion in the NWSRS and apply interim protective management: Arkansas River segments 1-4, East Fork Arkansas River, Eightmile 	<ul style="list-style-type: none"> Determine all 19 eligible WSR segments as not suitable for inclusion in the NWSRS and release them from interim protective management. Open eligible WSR segments to oil and gas leasing subject to standard stipulations. 	<ul style="list-style-type: none"> Determine 5 eligible segments as suitable for inclusion in the NWSRS and apply interim protective management (UARV): Arkansas River segments 1-4 and Eightmile Creek. Prohibit surface occupancy for

Comparison of Alternatives: Highlights

Resources	Alternative A ³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D ⁴ Preferred Alternative (Human Ecoregion)
	the BLM's interim management guidelines.	<p>Creek, Fourmile Creek, Grape Creek segments 1-3, Pass Creek, Beaver Creek, East Gulch, Falls Gulch, Cottonwood Creek, East Beaver Creek, Little High Creek, Red Creek, and West Beaver Creek.</p> <ul style="list-style-type: none"> • Close suitable WSR segments to leasable mineral development within 0.5 mile (0.8 kilometer) of the ordinary high water mark. • Exclude new ROWs within 0.25 mile (0.4 kilometer) of the ordinary high water mark. • All streams that are eligible or suitable for inclusion into the NWSRS are managed under BLM's interim management guidelines. 		<p>leasable mineral development along suitable WSR segments within 0.25 mile (0.4 kilometer) of the ordinary high water mark as defined in the <i>Wild & Scenic River Suitability Report—Royal Gorge Field Office: April 2019 Draft</i> (BLM 2019a) (UARV).</p> <ul style="list-style-type: none"> • All streams that are eligible or suitable for inclusion into the NWSRS are managed under the BLM's interim management guidelines.
Wilderness and wilderness study areas	<ul style="list-style-type: none"> • Manage WSAs under BLM Manual 6330 until Congress makes a decision on wilderness recommendations. • Return WSAs not designated as wilderness to other types of multiple-use management. 	<ul style="list-style-type: none"> • Manage 68,300 acres in the following areas as WSAs under BLM Manual 6330 unless designated by Congress as Wilderness Areas or released for other purposes: <ul style="list-style-type: none"> ○ Beaver Creek ○ High Mesa Grassland Research Natural Area ○ McIntyre Hills ○ Lower Grape Creek ○ Upper Grape Creek ○ Manage WSAs to protect their wilderness 	<ul style="list-style-type: none"> • Manage 68,300 acres in the following areas as WSAs under BLM Manual 6330 unless designated by Congress as Wilderness Areas or released for other purposes: <ul style="list-style-type: none"> ○ Beaver Creek ○ High Mesa Grassland Research Natural Area ○ McIntyre Hills ○ Lower Grape Creek ○ Upper Grape Creek ○ Manage WSAs to protect their wilderness characteristics if they are 	<ul style="list-style-type: none"> • Manage 68,300 acres in the following areas as WSAs under BLM Manual 6330 unless designated by Congress as Wilderness Areas or released for other purposes: <ul style="list-style-type: none"> ○ Beaver Creek ○ High Mesa Grassland Research Natural Area ○ McIntyre Hills ○ Lower Grape Creek ○ Upper Grape Creek ○ Manage WSAs to protect their wilderness characteristics if they are

Resources	Alternative A³ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D⁴ Preferred Alternative (Human Ecoregion)
		characteristics if they are released by Congress until subsequent land use planning outlining management is completed.	released by Congress until subsequent land use planning outlining management is completed.	released by Congress until subsequent land use planning outlining management is completed.
<i>SOCIAL AND ECONOMIC CONDITIONS</i>				
<i>Public health and safety</i>	<ul style="list-style-type: none"> Reclaim existing sites/areas from past mineral development considered to be potentially hazardous in coordination with the Colorado Mined Land Reclamation Board. 	<ul style="list-style-type: none"> Stabilize, rehabilitate, or restore abandoned mine lands on priority sites to improve water quality or watershed condition. Mitigate high-priority abandoned mine features. 	<ul style="list-style-type: none"> Stabilize, rehabilitate, or restore abandoned mine lands on priority sites to improve water quality or watershed condition. Mitigate high-priority abandoned mine features. 	<ul style="list-style-type: none"> Stabilize, rehabilitate, or restore abandoned mine lands on priority sites to improve water quality or watershed condition. Mitigate high-priority abandoned mine features.
	<ul style="list-style-type: none"> Control trespass dumping on BLM lands through signing, monitoring, and increasing public awareness. Incorporate hazards management into all appropriate integrated activity plans. 	<ul style="list-style-type: none"> Prohibit surface occupancy for fluid minerals development within 500 feet (152 meters) of geologic hazards. Prohibit ground-disturbing activities in geologic hazard areas. Proactively work to minimize dumping on public lands. 	<ul style="list-style-type: none"> Restrict surface occupancy for fluid minerals development within 500 feet (152 meters) of geologic hazards. Allow ground-disturbing activities in geologic hazard areas if the proposed project has been adequately analyzed and engineered prior to implementation. Prioritize working with communities to reduce dumping on public lands. 	<ul style="list-style-type: none"> Prohibit surface occupancy for fluid minerals development within 200 feet (61 meters) of geologic hazards. Avoid ground-disturbing activities in geologic hazard areas where possible. Prioritize working with communities to reduce dumping on public lands.
<i>Social and economic values</i>	<ul style="list-style-type: none"> All management decisions consider three economic perspectives (i.e., efficiency, cost effectiveness, and local and regional effects) and three social perspectives (i.e., community capacity to absorb change, social distribution of effects, and attitudes toward change) (Northeast RMP). 	<ul style="list-style-type: none"> There is no specific management for social and economic values for the action alternatives. 	<ul style="list-style-type: none"> There is no specific management for social and economic values for the action alternatives. 	<ul style="list-style-type: none"> There is no specific management for social and economic values for the action alternatives.

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CHAPTER 3. SUMMARY OF AFFECTED ENVIRONMENT AND IMPACTS

This chapter summarizes the existing conditions for the BLM resources, resource uses, special designations, and social and economic conditions within the RGFO planning area that may be affected by the alternatives described in Chapter 2 and Appendix A. This chapter also summarizes the effects that may result from implementing each of the action alternatives (Alternatives B, C, or D), or continuing with current management (Alternative A). See Appendix B, *Affected Environment and Analysis of Impacts*, for more detailed descriptions of the planning area and impacts of the alternatives, including a discussion of cumulative impacts.

Where appropriate, the tables in each program area below quantify the potential impacts from BLM-authorized actions. Impact types shown in the tables are identified in **bold** and briefly explained in the narrative section for each program area. The BLM does not expect the environmental consequences of the alternatives to exceed known legal thresholds or standards over the life of this RMP. Standard practices, required design features, BMPs, and guidelines for surface-disturbing activities are built into each alternative to avoid and minimize potential impacts.

3.1. RESOURCES

3.1.1. Air Resources and Climate

Air pollution and greenhouse gases (GHGs) within the planning area originate from such sources as industry, agricultural activities, energy production, transportation, residential activities, and consumer product use. The U.S. Environmental Protection Agency (EPA) has established **National Ambient Air Quality Standards** (NAAQS) for criteria pollutants, which include carbon monoxide (CO), nitrogen dioxide (NO₂), ozone, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead. The State of Colorado also has its own ambient air quality standards that are similar to the NAAQS.

The Colorado Department of Public Health and Environment (CDPHE) measures air quality at sites throughout the state. With the exception of ozone, all of the monitoring data show that the planning area is in compliance with the NAAQS. A portion of the planning area is located within a region that EPA has designated as nonattainment (having pollutant levels that exceed the NAAQS) for ozone. This is the Denver Metro-North Front Range 8-hour Ozone Nonattainment Area (NAA), which includes part or all of Denver, Adams, Arapahoe, Boulder, Broomfield, Douglas, Jefferson, Larimer, and Weld Counties. Federal actions that occur within the NAA are subject to the General Conformity Rule at 40 CFR Part 93, Subpart B. Appendix B provides the BLM's rationale demonstrating compliance with the rule within the context of the RMP.

The CDPHE assigns all geographical regions a priority class depending on how much air quality is allowed to degrade under the **Prevention of Significant Deterioration (PSD)** permitting rules. Class I areas are those of special national or regional natural, scenic, recreational, or historic value, and this category allows for very little degradation in air quality. Class II areas allow for reasonable industrial/economic expansion. Major stationary sources of air pollution authorized on BLM-administered lands can contribute to the consumption of PSD increments.

Visibility impairment or haze is caused when sunlight encounters tiny pollution particles in the atmosphere and is either absorbed or scattered, which reduces the clarity and color of what can be seen. Federal land management agencies including the BLM express visibility in terms of deciviews (dv). A change of one dv is approximately a 10-percent change in the light extinction coefficient (i.e., light that is scattered or absorbed and does not reach the observer), which is a small but usually perceptible scenic change. To assess the visibility impact of a project, the agencies use a threshold of 0.5 dv for projects that could contribute to a visibility problem and 1.0 dv for projects that by themselves could cause visibility issues. Measurements from the visibility monitors nearest the planning area (located at Rocky Mountain National Park and Great Sand Dunes National Park) show that existing visibility is less than under natural conditions, but shows an improving trend over time.

Deposition of air pollutants such as sulfur and nitrogen may cause **acidification** of soils and surface waters, affecting water chemistry, aquatic vegetation, invertebrate communities, amphibians, fish, soil microorganisms, and plants. Federal land management agencies use a threshold of 0.005 kilograms per hectare per year to assess deposition impacts of a project. Measurements from the deposition monitor nearest the planning area (located at Rocky Mountain National Park) show that existing deposition rates are greater than under natural conditions, but show a slightly improving trend over time.

Greenhouse gases are so named because of their heat-trapping capacity and contribution to global warming. These gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and several fluorinated species of gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. CO₂ is emitted from the combustion of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and as a result of other chemical reactions (e.g., cement manufacturing). The production and transport of coal, natural gas, and oil emit methane. Methane also results from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills. Agricultural and industrial activities as well the combustion of fossil fuels and solid waste emit N₂O. Fluorinated gases are powerful greenhouse gases that are emitted from a variety of industrial processes and are often used as substitutes for ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons).

The Intergovernmental Panel on Climate Change (IPCC 2013) indicates that an increase in atmospheric GHG concentration results in an increase in the earth's average surface temperature, primarily by trapping and thus decreasing the amount of heat energy radiated by the Earth back

into space. The phenomenon is commonly referred to as global warming. The Intergovernmental Panel on Climate Change expects global warming to affect weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, all of which is collectively referred to as climate change. Appendix B provides further information on climate trends and potential effects of climate change. There are no NAAQS for GHGs.

Potential climate impacts of a federal action are evaluated based on GHG emissions levels.

Table 3.1 below summarizes the potential impacts of Alternatives A through D on air resources in the planning area. Table 3.1 indicates that the variations in emissions and potential impacts among the alternatives are relatively small.

Table 3.1. Summary of Potential Impacts on Air Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
NAAQS and Colorado AAQS	Not anticipated to exceed; contribution to any ozone exceedance in NAA would be very small. Alternative A is the baseline to which impacts under Alternatives B-D are compared at right.	Not anticipated to exceed; contribution to any ozone exceedance in NAA would be very small. Highest impact for any pollutant is a 6% decrease compared to Alternative A.	Not anticipated to exceed; contribution to any ozone exceedance in NAA would be very small. Highest impact for any pollutant is a 1% increase compared to Alternative A.	Not anticipated to exceed; contribution to any ozone exceedance in NAA would be very small. Highest impact for any pollutant is a 3% increase compared to Alternative A.
PSD increment impacts	Contribution well below all increments. Maximum impact for any pollutant is 0.2% of increment. ¹	Contribution well below all increments. Maximum impact for any pollutant is 0.2% of increment. ¹	Contribution well below all increments. Maximum impact for any pollutant is 0.2% of increment. ¹	Contribution well below all increments. Maximum impact for any pollutant is 0.2% of increment. ¹
Visibility impacts	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹
Acidic deposition impacts	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹	Contribution well below impact thresholds. Maximum impact is 6% of threshold. ¹

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
GHG emissions and global climate change	GHG emissions in the planning area would, in combination with other GHG emissions globally, contribute incrementally to global climate change.	GHG emissions would be about 9% less than under Alternative A. Potential climate impacts would be similar to those under Alternative A.	GHG emissions would be about 1% greater than under Alternative A. Potential climate impacts would be similar to those under Alternative A.	GHG emissions would be about 2% greater than under Alternative A. Potential climate impacts would be similar to those under Alternative A.

¹Results for CARMMS high emission scenario compared to applicable thresholds for PSD Class I areas. Full CARMMS report available at <https://www.blm.gov/download/file/fid/22876>. CARMMS modeling does not distinguish among alternatives.

% percent

AAQS Ambient Air Quality Standards

CARMMS Colorado Air Resources Management Modeling Study

3.1.2. Soil Resources

The planning area contains a great diversity of soil types due to dramatic variation in geological parent material, climate, and topography. The BLM used the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) database (Soil Survey Staff 2017) to characterize the general types and properties of soils. Soils of the Eastern Plains are derived primarily from sedimentary rocks and materials deposited by wind, while soils in the mountains are formed from glacial and alluvial deposits and from a variety of sedimentary, igneous, and metamorphic rocks. Soils conditions are affected by natural processes as well as activities managed or authorized by the BLM that result in soil disturbance or otherwise affect the structure, composition, and erosion potential of underlying soils.

The BLM RGFO defines **soils of management concern** as soils with high water erosion potential, high wind erosion potential, low drought tolerance, poor upland soil health, and prime or unique farmlands. **Fragile soils** refer to the subset of these soils that are prone to erosion by wind or water or prone to impacts from drought conditions. The BLM estimated the distribution and abundance of fragile soils in the planning area using NRCS SSURGO data (Soil Survey Staff 2017). Most fragile soils are found on steep slopes in the western portion of the planning area or on eolian dune deposits on the plains. Table 3.2 reports the acreages of fragile soils in the planning area classified by level of management concern.

Table 3.2. Fragile Soils in the Royal Gorge Field Office

Soil Type	BLM Surface Acres	Federal Mineral Decision Acres (Including BLM Surface)
Fragile soils of high concern	78,000	601,500
Fragile soils of moderate concern	305,100	1,665,700
Fragile soils of low concern	268,400	1,018,300
No data	6,700	26,300

Source: BLM internal data.

Surface disturbance from a variety of BLM-authorized activities affects soils in the planning area. **Fluid mineral development** is anticipated to be the most widespread surface-disturbing activity. Fragile soils are most vulnerable to impacts from surface-disturbing activities due to their higher susceptibility to erosion and limited reclamation potential.

The effects of **livestock grazing** on soil may be adverse or beneficial depending on grazing practices, soil conditions, and other factors. In general, livestock grazing at light to moderate intensities is thought to have beneficial impacts on resilient rangeland soils, while high intensity grazing, or grazing at lower intensities in riparian areas or on fragile soils, can degrade soil conditions.

Table 3.3 below summarizes the potential impacts of Alternatives A through D on soil resources in the planning area.

Table 3.3. Summary of Potential Impacts on Soil Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Fragile soils of moderate to high concern closed to surface-disturbing activities (BLM surface acres)	Not available ¹	59,800 Most beneficial	20,300 Beneficial	8,700 Least beneficial
Fragile soils of moderate to high concern open to fluid mineral leasing (BLM surface acres)	299,400 Adverse	188,000 Least adverse	299,400 Adverse	327,400 Most adverse
Fragile soils of moderate to high concern open to livestock grazing (BLM surface acres)	376,800 Adverse	324,900 Least adverse	383,100 Most adverse	383,100 Most adverse

¹Equivalent GIS data were not available for Alternative A.

3.1.3. Water Resources

Surface water and groundwater impacts from BLM-authorized activities in the planning area originate primarily from surface-disturbing activities and changes in vegetation or land uses that affect downstream water resources. Specific mechanisms that result in **major waterway impacts** include consumptive withdrawals, alteration of water chemistry from pollutant discharges, and the removal of protective vegetation and surface disturbance that increase **sedimentation and erosion**.

Fluid mineral development activities and **ROW development** have the potential to contribute to water quality and quantity impacts in the planning area through erosion and sediment production, fuel spills, chemicals, hydraulic fracturing fluids, produced water, or produced oil and gas. Stream crossings, particularly low water crossings, associated with these development activities can contribute large amounts of sediment to streams.

Groundwater impacts result from consumptive withdrawals or those activities that modify recharge rates, thereby affecting groundwater quantity. Groundwater impacts also result from activities that alter groundwater quality and primarily include oil and gas development, mining, recreation, agriculture, and forestry.

Groundwater in the planning area ranges from local unconsolidated aquifers to extensive bedrock (consolidated) aquifers, with most groundwater occurring in alluvial fill. Major groundwater features in the planning area include alluvial aquifers along major waterways. The number of wells drilled (including water supply, water disposal, and oil and natural gas wells), the number of springs developed, groundwater diversions, and water conservation projects influence groundwater quantity. Wells that extract groundwater, or disposal wells that inject water into the groundwater system, also influence groundwater quantity.

Groundwater quality throughout the planning area varies greatly from one aquifer to another, and even within aquifers. Activities that affect groundwater recharge areas, involve withdrawal of groundwater, or increase or decrease infiltration into the ground result in the greatest impacts on groundwater resources. Shallow alluvial wells are the most susceptible to return-flow quality, mineral weathering, and organic compound loading from fertilizer and pesticide leaching.

The planning area covers parts of three major river sub-basins: the Upper Arkansas, Upper South Platte, and Republican Rivers. Within these sub-basins, the planning area intersects portions of 29 major watersheds and 14 major waterways (see Table 3.4). Runoff from these river basins is a major contributor to the supply of surface water in eastern Colorado. Unconsolidated aquifers are most common in alluvial deposits along perennial watercourses, particularly along the major waterways listed in Table 3.4.

Table 3.4. Major Watersheds and Waterways in Planning Area

Major Watersheds (8-Digit Hydrologic Unit Level)		Major Waterways
<ul style="list-style-type: none"> • Arkansas Headwaters • Upper Arkansas • South Platte Headwater • Huerfano • Upper Arkansas-Lake Meredith • Saint Vrain • Upper Arkansas-John Martin Reservoir • Purgatoire • Apishapa • Horse • Clear • Fountain • Big Sandy • Cache La Poudre 	<ul style="list-style-type: none"> • Middle South Platte-Sterling • Middle South Platte – Cherry Creek • Cimarron Headwaters • Upper South Platte • Two Butte • Arikaree • South Fork Republican • Big Thompson • Bijou • North Fork Republican • Chico • Upper Cimarron • Sand Arroyo • Whitewoman • North Fork Cimarron 	<ul style="list-style-type: none"> • Arkansas River • South Platte River • Poudre River • Big Thompson River • Little Thompson River • St. Vrain River • Boulder Creek • Clear Creek • Monument Creek • St. Charles River • Huerfano River • Cucharas River • Purgatoire River • Cimarron River

Source: USGS Watershed Boundary Dataset.

Table 3.5 below summarizes the potential impacts of Alternatives A through D on water resources in the planning area.

Table 3.5. Summary of Potential Impacts on Water Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Major waterway impacts	Highest potential	Low potential	Potential	Low potential
Sedimentation and erosion impacts	Potential	Low potential	Potential	Low potential
Impacts from major watersheds open to fluid mineral leasing (BLM mineral acres)	1,060,500 Potential	892,900 Lowest potential	1,060,600 Potential	1,061,364 Highest potential
Impacts from major watersheds open to ROW development (BLM surface acres)	461,400 Potential	294,900 Lowest Potential	470,800 Potential	471,135 Highest potential
Groundwater impacts	Potential	Low potential	Potential	Low potential

3.1.4. Terrestrial Wildlife

Wildlife resources include big game, upland game, waterfowl, raptors, migratory birds, small mammals, and reptiles. Some terrestrial wildlife species are generalists that may be found in a

broad range of habitat types, while other species are specialists that may require specific habitat types and a limited range of site characteristics. Wildlife diversity and abundance typically reflect the diversity, quality, and quantity of habitat.

Many activities affect species or habitats through disturbance, direct habitat loss, habitat modification and degradation, habitat fragmentation, direct mortality, habitat avoidance, and interference with movement patterns. The primary contributors to terrestrial wildlife impacts include surface-disturbing activities, surface occupancy, and mineral development. These impact variables and the occurrence of select species and their associated habitats are discussed in more detail below.

3.1.4.1 Big Game

Elk (*Cervus canadensis*) and mule deer (*Odocoileus hemionus*) are the most abundant and widespread big game species in the planning area, and BLM-administered lands provide the majority of elk and deer winter range in the area. Pronghorn (*Antilocapra americana*) occur throughout the planning area, mostly in the southeastern plains of Colorado. Several herds are also present in the open parks of the mountains, often using lands administered by the BLM. Rocky Mountain bighorn sheep (*Ovis canadensis*) are widespread in mountainous portions of the planning area, or within areas containing canyons.

Moose (*Alces alces*), black bear (*Ursus americanus*), mountain lion (*Puma concolor*), and mountain goat (*Oreamnos americanus*) also occur in the planning area. However, the status of locally managed populations of these species is unknown. Ranges for moose and mountain goat have very little spatial overlap into the planning area, so occurrence is incidental. White-tailed deer (*Odocoileus virginianus*) are present in the planning area, and occur primarily on the eastern plains.

Big game species use migration corridors in the planning area to move between areas of seasonally important habitat. Lower elevation habitats considered to be critical for maintaining herds are known as **big game winter ranges**. Big game species tend to avoid disturbances associated with energy development and other surface-disturbing activities on their seasonal ranges. Human disturbance and habitat loss that occur in stopover sites and winter ranges could reduce foraging opportunities, disrupt movement patterns, and increase energy expenditures. Beneficial impacts on big game species occur from **mitigation for surface disturbance in big game habitat**, which improves or restores important wildlife habitat or minimizes disruptions to seasonal wildlife movement patterns.

3.1.4.2 Birds

A variety of migratory bird species occur within the planning area, including 43 priority species listed as U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern (USFWS 2016). Human disturbance near nests, including **surface occupancy** from **fluid mineral development**, can result in abandonment; high nestling mortality from overheating,

chilling, or dehydration when adults are flushed from the nest and young are exposed; premature fledging; and reduced access to resources.

Raptor species occurring in the planning area include the red-tailed hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), northern goshawk (*Accipiter gentilis*), great horned owl (*Bubo virginianus*), northern pygmy owl (*Glaucidium gnoma*), northern saw-whet owl (*Aegolius acadicus*), and long-eared owl (*Asio otus*).

Streams, rivers, reservoirs, ponds, canals, wetlands, and associated riparian vegetation provide habitat for waterfowl and shorebirds in the planning area. Canada goose, mallard, green-winged teal, common merganser, and American widgeon are a few of the more common game waterfowl species found in the area. Great blue heron, great egret, sandhill crane, and other wading birds and shorebirds can be found along major rivers, valleys, and irrigated fields, many as spring and fall migrants. Fluid mineral development can affect waterfowl and shorebird populations if activities degrade, fragment, or destroy habitats associated with these species.

In general, the condition and quality of breeding, foraging, resting, roosting, and hiding cover habitats for many birds in some portions of the planning area have declined over time as a result of pressures from development, recreation, improper livestock grazing, invasive plants, and other factors. In other portions of the planning area, the quality of various habitats are in stable or decent condition.

3.1.4.3 State Wildlife Areas Adjacent to BLM Lands

Several state-owned and/or managed wildlife areas located adjacent to, or within the planning area are Lake Dorothea State Wildlife Area, James Mark Jones State Wildlife Area, Spinney Mountain State Wildlife Area, and Cherokee Park State Wildlife Area. Habitat loss and degradation from mineral development on BLM-administered lands could result in indirect impacts on similar habitats and wildlife within adjacent state wildlife areas. Conversely, restrictions on mineral development benefit adjacent wildlife areas by reducing the effects of fragmentation and human disturbances in important wildlife habitats.

Table 3.6 below summarizes the potential impacts of Alternatives A through D on terrestrial wildlife in the planning area.

Table 3.6. Summary of Potential Impacts on Terrestrial Wildlife of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Impacts of fluid mineral development in big game winter range	Potential	No potential	Reduced potential	Reduced potential
Impacts of surface-disturbing activities in big game winter range	Potential	Reduced potential	Potential	Reduced potential
Impacts of surface occupancy on migratory birds	Greatest potential	Potential	Lowest potential	Potential
Impacts of fluid mineral development on waterfowl	Potential	No potential	Reduced potential	Reduced potential
Impacts of all mineral development on state wildlife areas adjacent to BLM lands	Potential	No potential	Potential	Potential
Impacts of fluid mineral development on state wildlife areas adjacent to BLM lands	Potential	No potential	Reduced potential	Reduced potential
Benefits of mitigation for surface disturbance in big game habitat	No benefit	Beneficial	No benefit	Beneficial

3.1.5. Aquatic and Riparian Resources

Within the planning area, a diversity of wetland types and riparian communities provide important functions for terrestrial and aquatic wildlife, agriculture, recreation, floodplain function, water supply, and other societal needs. Aquatic wildlife species inhabit perennial, intermittent, and ephemeral streams throughout the planning area and include fish, aquatic macroinvertebrates, amphibians, and reptiles that use aquatic areas during some part of their life stage. Aquatic wildlife may be impacted as a result of impacts on streams, wetlands, and riparian areas, but also by the condition of adjacent upland habitats that some species utilize for one or more life stages.

Surface-disturbing activities, including recreation, improper grazing, renewable energy development, **mineral resource development**, and construction of **new infrastructure** can contribute to the decline in abundance, distribution, or functionality of wetland and riparian areas. Fluid mineral development activities can impact wetland and riparian areas through spills of fuel, chemicals, or other materials, or through the introduction of sediment. Surface-disturbing activities may also result in direct habitat loss modification or may introduce materials

that indirectly degrade aquatic habitats. Proactive efforts to maintain or **acquire water rights** and cooperation between agencies and partners to improve riparian conditions benefit aquatic wildlife.

3.1.5.1 Riparian Areas

The BLM uses a methodology called **proper functioning condition (PFC)** assessment to determine if resources are meeting required land health standards. PFC refers to how well the physical processes are functioning within a riparian community. Riparian areas assessed using the PFC methodology are assigned to one of three categories: PFC, functionally at risk (FAR), or nonfunctional.

The RGFO tracks and manages 218 known individual lotic riparian areas within the planning area, totaling approximately 525 miles. Riparian areas occur throughout the planning area but are primarily located west of the Front Range along tributaries of the upper South Platte River and along the Arkansas River and its tributaries. PFC assessments have been completed for most of the 218 riparian areas tracked and managed by the RGFO. Table 3.7 summarizes the current condition of riparian resources in the planning area.

Table 3.7. Summary of Riparian Area Condition in the Royal Gorge Field Office

Condition	Number of Individual Riparian Areas	Total Length (Miles)
Proper functioning condition (PFC)	134	345.37
Functionally at risk (FAR)	42	102.31
Nonfunctional (NF)	34	67.46
Unknown	8	10.06
Total	218	525.20

Source: BLM internal data.

Notes: This list does not include streams with less than 0.1 mile on BLM-administered land. Condition is based on the most recent assessments since the Royal Gorge Resource Area RMP (BLM 1996).

3.1.5.2 Lotic Aquatic Environments

Lotic freshwater environments are distinguished by the presence of flowing water and include perennial rivers, streams, creeks, and man-made diversions. The primary lotic aquatic habitat central to the RGFO is the Arkansas River. Approximately 40 percent of the river runs through public lands between its headwaters and Pueblo Reservoir. Lotic systems in the planning area provide habitat for a variety of fish, amphibians, and macroinvertebrates and are important resources for recreation, firefighting, imperiled species protection, and water-right actions.

Lotic aquatic habitats tend to quickly show impacts from changes occurring on the landscape. Although some lotic aquatic habitats in the planning area remain nearly pristine, other lotic systems have been highly modified or removed from existence by human activities over the last 150 years. BLM policies protect, enhance, and restore lotic aquatic habitat in accordance with

the agency's multiple-use mandate and mission. Current trends that are likely to continue and would affect lotic aquatic habitats and associated aquatic species include housing and commercial developments near riparian areas, increased public use (angling), disease (i.e., whirling disease and chytrid fungus), and spread of invasive aquatic species and pathogens.

3.1.5.3 Lentic Aquatic Environments

Lentic freshwater environments are characterized by the lack of flowing water and include lakes, ponds, wetlands, and reservoirs. Many lentic environments on the Eastern Plains are man-made irrigation reservoirs that provide aquatic habitat. In the western portion of the planning area, isolated wetlands, seeps, springs, wetland habitats, and small lakes at higher elevations are present. The Clear Creek, DeWeese, and Eleven Mile Reservoirs are larger reservoirs located in the western portion of the planning area. There are currently 34 wetland areas totaling approximately 262 acres which are tracked and managed within the planning area, although new areas are being identified through mapping and geographic information system (GIS) tools, exchanges and acquisitions, or changes in classification as a result of field inventories.

Trends in lentic systems generally follow those for lotic systems; however, new water storage or potential changes to water delivery coupled with drought and a tightening water supply resulting from population growth could substantially affect lentic systems within the planning area in the future. Increases in surface-disturbing activities, combined with the removal of protective vegetation, could also increase **sedimentation and erosion impacts** in wetland areas.

3.1.5.4 Fisheries

Within the planning area, 42 streams, creeks and rivers totaling approximately 152 miles compose the primary cold- and warm-water fisheries on BLM-administered lands. These fisheries occur mostly within the Arkansas River basin and its tributaries; however, there are short stream reaches on public lands in the South Platte basin. Fisheries in the planning area support a variety of sportfish, mostly notably several species of trout, which are of high recreational interest among anglers. In 2014, the Arkansas River fishery achieved "Gold Medal" water status, which is reserved for select, prolific waters that have attained a specific density of trout. Angling harvest, species management, and population monitoring are generally the responsibility of Colorado Parks and Wildlife (CPW); however, the BLM is an active cooperator in managing cold-water fisheries in the planning area.

Table 3.8 below summarizes the potential impacts of Alternatives A through D on aquatic and riparian resources in the planning area.

Table 3.8. Summary of Potential Impacts on Aquatic and Riparian Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Percent of riparian areas managed for PFC	75	90	75	90
Sedimentation and erosion impacts in wetlands	Potential	Lowest potential	Potential	Low potential
Mineral resource impacts on wetlands and riparian areas	Potential, but minimized with applicable CWA permit conditions	Avoided through NSO stipulations on BLM surface and split estate	Potential, but minimized with applicable CWA permit conditions	Avoided through NSO stipulations on BLM surface
Impacts of fluid mineral development on aquatic wildlife	Potential	Least potential	Potential	Reduced potential
Benefits of proactive water right acquisitions to aquatic wildlife	No benefit	Beneficial	Beneficial	Beneficial
Impacts of new infrastructure on aquatic wildlife	No benefit	Beneficial	Reduced benefit	Beneficial

CWA Clean Water Act
NSO No Surface Occupancy

3.1.6. Vegetation

Vegetation communities on BLM-administered lands in the planning area consist of grasslands, woodlands/shrublands, forests, and riparian/wetlands. The BLM manages these areas toward meeting the *Colorado Public Land Health Standards* (BLM 1997). Colorado Public Land Health Standard 3 aims to achieve productive, resilient, and diverse native and other desirable plant communities. The BLM applies vegetation treatments, such as herbicides, manual and mechanical methods, and biological controls, to enhance vegetation communities.

Approximately 30 percent of BLM-administered lands in the planning area are failing to meet Standard 3 for a variety of reasons.

Various activities and designations on public lands can impact vegetation through direct disturbance or by authorizing changes in land use that alter the composition of vegetation communities. Most of the planning area is in the Southern Rockies ecoregion, which is generally covered by grass or shrubs in the low to middle elevations and can support extensive **livestock grazing**. Livestock grazing can have either adverse or beneficial effects on vegetation depending on management of this activity. The BLM's land health assessments (LHAs) have revealed some overbrowsed and disturbed shrublands and grasslands throughout the planning area.

Surface-disturbing activities that impact vegetation include fluid mineral development and ROW development. These disturbances can lead to weed invasions, with linear roads or ROWs posing a particular threat due to the ease of seed transportation. **Fluid mineral leasing closures** and **ROW exclusion areas** can protect vegetation from surface disturbance impacts and reduce the potential spread of noxious weeds. The RGFO performs approximately 50 weed treatments per year. The BLM's LHAs indicate that noxious weeds have the ability to spread rapidly but are not currently a dominant feature of vegetation in the planning area.

The planning area contains various vegetation communities that provide forage or habitat for wildlife species, including conifer and deciduous forests that cover approximately 32 percent of the BLM-administered lands in the planning area. The **designation of areas of critical environmental concern (ACECs)** to protect wildlife habitat or other resources also conserves vegetation communities.

Table 3.9 below summarizes the potential adverse and beneficial impacts of Alternatives A through D on vegetation in the planning area.

Table 3.9. Summary of Potential Impacts on Vegetation of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Livestock grazing allotment closures (BLM surface acres)	9,700	96,400	0	0
Fluid mineral leasing closures (BLM surface acres)	68,300 Least beneficial	265,600 Most beneficial	68,700 Beneficial	68,700 Beneficial
Lands and realty ROW exclusion areas (BLM surface acres)	86,200 Beneficial	257,300 Most beneficial	68,300 Least beneficial	68,300 Least beneficial
ACEC designation (BLM surface acres)	69,500 Beneficial	101,100 Most beneficial	34,800 Least beneficial	46,300 Beneficial

3.1.7. Special Status Species

BLM special status species are plants and animals that have been proposed for listing under provisions of the Endangered Species Act (ESA) or are officially listed as threatened or endangered. BLM special status species also include candidate species for listing as threatened or endangered under the ESA; species that have been de-listed within the previous 5 years; or any additional species that have been designated as sensitive by the BLM State Director.

A wide range of activities affect special status species and their habitats, including impacts from recreation, **timber harvest**, mineral resource development, renewable energy development, road construction, and other **surface-disturbing activities**. **Land use authorizations** for infrastructure such as new roads, pipelines, transmission lines, rail lines, and communication

facilities adversely affect special status species habitat because they remove vegetation, alter the landform, and introduce infrastructure into the landscape.

3.1.7.1 Federally Listed, Candidate, and Proposed Species

The USFWS manages federally threatened and endangered species and designated critical habitat in cooperation with other federal agencies, with the ultimate goal of species recovery and viability. The USFWS manages candidate species to maintain viable populations in order to avoid listing. Table 3.10 identifies the federally listed and candidate species occurring within the planning area. There are no species proposed for listing in the planning area.

Table 3.10. Federally Listed and Candidate Species in the RGFO

Name	Listing Status
Black-footed ferret (<i>Mustela nigripes</i>)	Endangered, experimental population, non-essential
Canada lynx (<i>Lynx canadensis</i>)	Threatened
New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	Endangered
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	Threatened
Least tern (<i>Sterna antillarum</i>)	Endangered
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Threatened
Piping plover (<i>Charadrius melodus</i>) ¹	Threatened
Whooping crane (<i>Grus americana</i>) ¹	Endangered
Greenback cutthroat trout (<i>Oncorhynchus clarki stomias</i>)	Threatened
Pallid sturgeon (<i>Scaphirhynchus albus</i>) ¹	Endangered
Arapahoe snowfly (<i>Arsapnia arapahoe</i>)	Candidate
Pawnee montane skipper (<i>Hesperia leonardus montana</i>)	Threatened
Uncompahgre fritillary butterfly (<i>Boloria acrocneuma</i>)	Endangered
Colorado butterfly plant (<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>)	Threatened
Penland alpine fen mustard (<i>Eutrema penlandii</i>)	Threatened
Ute ladies' tresses orchid (<i>Spiranthes diluvialis</i>)	Threatened

Source: USFWS 2016.

¹Water depletions in the North Platte, South Platte, and Laramie River Basins may affect the species and/or critical habitat associated with the Platte River in Nebraska.

Designated critical habitat occurs in the planning area for three listed species: New Mexico meadow jumping mouse, Preble's meadow jumping mouse, and Mexican spotted owl.

3.1.7.2 Sensitive Species

The BLM identifies sensitive species using criteria in *BLM Manual 6840 – Special Status Species Management* (BLM 2008d) and comments received by the BLM field offices, along with information from the Colorado Natural Heritage Program (plants) and CPW's State Wildlife

Action Plan. A total of 40 BLM sensitive species (13 birds, 12 plants, 7 mammals, 4 amphibians, 3 reptiles, and 1 fish) are known to occur, or potentially occur, within the planning area.

Current and future threats to special status species include habitat loss and fragmentation, poaching, predation, disease, and invasive species. Habitat degradation and loss are caused or exacerbated by historic or improper livestock overgrazing, fluid mineral development, mining, water diversions, recreation, agriculture, residential development, and other human activities. Fire, drought, vegetation-type conversions, climate change, and natural processes may also contribute to or exacerbate landscape changes over time.

Table 3.11 below summarizes the potential impacts of Alternatives A through D on special status species in the planning area.

Table 3.11. Summary of Potential Impacts on Special Status Species of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Impacts of land use authorizations in special status species habitat	Potential	No potential	Potential	Reduced potential
Impacts of surface-disturbing activities within prairie dog colonies	Potential	No potential	Potential	Reduced potential
Impacts of timber harvest on Canada lynx habitat	Potential	No potential	Potential	Reduced potential
Impacts of surface-disturbing activities on bald and golden eagles	Potential	No potential	Potential	Reduced potential

3.1.8. Wildland Fire and Fuel Management

Fires in the RGFO have increased in frequency and severity over the past several decades. From 1980 to 2017, wildfires occurred at an average rate of 27 per year, each burning an average of 240 acres on BLM-administered surface lands (BLM 2018). There were 21 large fires in the planning area during this time, ignited by both natural and human causes, which resulted in a combined loss of more than 1,000 structures (BLM 2018).

Over the past nine years, the BLM has conducted fuel treatments on an annual average of 2,039 acres of BLM-administered surface land using a combination of prescribed fire, mechanical treatment, and managed wildfire (BLM internal database). This rate of treatment represents only 12 percent of the estimated 17,367 acres that would need to be treated annually

to maintain the historical range of variability in vegetation, fuels, and disturbance regimes (BLM internal data).

The limited area of fuel treatments conducted in the planning area and increasing departure from natural fire regimes pose challenges for returning the landscape to a more sustainable and resilient condition. These challenges are exacerbated by limited and declining budgets for the wildland fire and fuel management program, the scattered pattern of BLM land ownership, expansion of the wildland-urban interface, increasing ambient temperatures, and prolonged droughts.

BLM decisions to **implement fuel treatments** generally result in beneficial effects to fire and fuel management by increasing the resiliency of the ecosystems to subsequent fires. Decisions that restrict the BLM's ability to conduct or manage fuel treatments, prescribed fire, unplanned ignitions, or post-fire activities would have adverse impacts on wildland fire management. The BLM may **emphasize fuel treatments** to achieve specific outcomes that confer other benefits besides fire resiliency, such as improving forest health, providing timber products, or maintaining rangeland.

Table 3.12 below summarizes the potential impacts of Alternatives A through D on wildland fire and fuel management in the planning area.

Table 3.12. Summary of Potential Impacts on Wildland Fire and Fuel Management of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Fuel treatment implementation	Few restrictions	Most restrictive	Least restrictive	Few restrictions
Fuel treatment emphasis	Varies	Maximize ecological benefits	Protection of wildland-urban interface and infrastructure	Synergies with other resources

WUI Wildland-urban interface

3.1.9. Cultural Resources

Cultural resources in the planning area include prehistoric and historical archaeological and architectural structures, features, and objects, as well as Native American traditional cultural and religious properties. This analysis evaluates potential impacts on "historic properties," which refers to a specific subset of cultural resources listed, eligible for listing, or those not yet evaluated for listing in the National Register of Historic Places (NRHP).

Actions on federal lands in the planning area over the last several decades have triggered requirements to prepare cultural resource inventories (Greubel et al. 2017). These inventories identified 179 NRHP-eligible or -listed resources and 153 resources that need additional testing

to determine NRHP eligibility. The BLM allocates historic properties to appropriate use categories to assist planners and applicants in proactively reducing potential land use conflicts, establish which resources need to be protected, and determine when or how use should be authorized. Most NRHP-eligible cultural resources fall within the education/interpretative use category (88 resources), followed by research/scientific use for educational/interpretive use (38 resources), and general research/scientific use (27 resources). Sixteen historic properties within the planning area have been formally designated as national historic landmarks due to their exceptional importance to the history of the United States.

Ongoing trends show that actions within the planning area that result in **cultural resource impacts** include ground-disturbing activities such as vegetation treatments and mineral development, increased public access to remote areas, livestock grazing, and land disposal. These actions can alter the characteristics that qualify a resource for NRHP listing or diminish or remove the cultural values of an area important to Native American or other traditional communities.

Table 3.13 below summarizes the potential impacts of Alternatives A through D on cultural resources in the planning area.

Table 3.13. Summary of Potential Impacts on Cultural Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Cultural resource impacts	Potential	Lowest potential	Potential	Potential

3.1.10. Tribal Uses and Interests

Although the planning area does not contain trust assets or tribal resources managed by the DOI, resources and places where tribes have ties to the landscape as sacred and traditional tribal use and interest areas are likely present. The BLM consults with the following Native American tribes regarding the identification, evaluation, and protection of tribal use and interest areas that may be affected by actions on federal lands: Apache Tribe of Oklahoma, Cheyenne and Arapaho Tribes, Cheyenne River Sioux Tribe, Comanche Nation, Crow Creek Sioux Tribe, Eastern Shoshone Tribe, Jicarilla Apache Nation, Kiowa Tribe of Oklahoma, Northern Arapaho Tribe, Northern Cheyenne Tribe, Ute Indian Tribe (Northern Ute), Oglala Sioux Tribe, Pawnee Nation of Oklahoma, Rosebud Sioux Tribe, Southern Ute Tribe, Standing Rock Sioux Tribe, and Ute Mountain Ute Tribe.

Tribal use and interest areas include places important to cultural values, religious beliefs, and traditional practices such as traditional cultural properties, sacred/religious sites, or special use areas. No tribal use and interest areas have been identified in the planning area through consultation conducted to date. Actions that could affect tribal uses and interests include those

that result in direct surface and subsurface disturbance, land development causing visual impacts, and land disposal and acquisition. These actions could also limit **tribal access** to areas of traditional use and interest for hunting, fishing, or resource collection. The BLM's continuing consultation and collaboration with federally recognized tribes is intended to reestablish traditional ties to the landscape and identify and protect sacred and traditional areas of tribal uses and interests.

Table 3.14 below summarizes the potential impacts of Alternatives A through D on tribal uses and interests in the planning area.

Table 3.14. Summary of Potential Impacts on Tribal Uses and Interests of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Tribal use and interest impacts	Potential	Lowest potential	Potential	Potential
Tribal access impacts	Potential	Lowest potential	Potential	Potential

3.1.11. Paleontological Resources

There are numerous known fossil localities within the planning area, although not all have been formally documented. The BLM has developed relationships with paleontological data repositories including the U.S. Geological Survey (USGS), the Denver Museum of Nature and Science, and the University of Colorado Museum of Natural History for assistance with maintaining and developing paleontological resource locality information. The *Paleontological Resource Overview of the Royal Gorge Field Office Planning Area* (Murphey et al. 2015) describes the paleontology and geology of each geologic unit in the planning area.

The BLM uses the potential fossil yield classification (PFYC) system, as outlined in BLM Instruction Memorandum (IM) 2008-009 and updated in BLM IM 2016-124, to classify the probability that lands will yield paleontological resources in the planning area. Paleontological resources are integrally associated with the geologic rock units in which they are located, therefore, the probability of finding paleontological resources can be broadly predicted by geologic units. A classification of PFYC 5 indicates the highest potential for the presence of paleontological resources, while a classification of PFYC 1 indicates the lowest potential for these resources. Table 3.15 provides the amount of BLM-administered surface land in each PFYC category as currently inventoried.

Table 3.15. Acreage of BLM RGFO Surface Estate in Each Potential Fossil Yield Classification Category

Potential Fossil Yield Classification (PFYC)	Acres of BLM-administered Surface Land	Percent of BLM-administered Surface Land
5 (Most likely to contain fossils)	76,600	11%
4	0	0
3	142,000	21%
2	1,500	<1%
1 (Least likely to contain fossils)	447,500	67%

Source: BLM internal data.

Actions that physically alter, damage, or destroy fossils or their contexts result in **paleontological impacts**. These actions typically result from ground-disturbing activities, including mineral resource development, renewable energy development, and road construction; increased access to remote areas through recreational and commercial land use resulting in a greater potential for illegal fossil collection and vandalism; and land disposal and acquisition, because there are no protective measures required for paleontological resources on private lands. This analysis assumes that the greatest impacts would occur where these actions occur on lands in higher PFYC classes.

Table 3.16 below summarizes the potential impacts of Alternatives A through D on paleontological resources in the planning area.

Table 3.16. Summary of Potential Impacts on Paleontological Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Paleontological impacts	Potential	Lowest potential	Potential	Potential

3.1.12. Visual Resources

The BLM uses the visual resource management (VRM) system to manage visual resources on BLM-administered public lands by identifying visual values, establishing objectives, and taking management actions to achieve those objectives. **VRM class** designations determine appropriate levels of management of visual resource values and demands from other resources, with VRM Class I being the most restrictive to development and VRM Class IV being the least.

Visual resources within the planning area are of value to local communities and promote tourism that helps support their economies. Currently, two special recreation management areas (SRMAs) and 14 scenic byways located within the planning area draw approximately 1.8 million

visitors annually. The BLM completed the visual resource inventory (VRI) for the entire RGFO in April 2015, including split-estate lands, covering approximately 32 million acres (Table 3.17).

Table 3.17. Visual Resource Inventory Classifications in the RGFO

VRI Classification	Acres ¹	Percent of Total Acres within RGFO Boundary	Percent of BLM Surface Acres within RGFO Boundary	Percent of Split-Estate Acres within RGFO Boundary
VRI Class I ²	0	0%	0%	0%
VRI Class II	4,530,100	14%	55%	28%
VRI Class III	5,363,500	17%	33%	18%
VRI Class IV	22,212,300	69%	12%	54%

Source: BLM internal data.

¹ Because of changes in land ownership patterns over time, acreages and percentages are only approximations.

² The inventory area includes WSAs, which are managed as VRM Class I unless Congress releases the area from Wilderness consideration. WSAs may be inventoried and found to possess qualities of another VRI class, but are always managed as Class I.

Table 3.18 shows the acreage of each VRM class in the existing RMPs (BLM 1986; BLM 1996).

Table 3.18. Visual Resource Management Class Acreages in the RGFO

VRM Class	Acres ¹	Percentage ¹
I	68,300	11%
II	166,800	27%
III	328,200	53%
IV	59,500	10%
Total	622,800	100%

Source: BLM internal data.

¹ Because of changes in land ownership patterns over time, acreages and percentages are only approximations.

Note: Rows and columns may not sum to totals due to rounding.

The main source of impacts on the planning area's landscape character is from the residential and commercial development of private lands. The BLM decisions regarding vegetation, fire and fuel, forestry, minerals and renewable energy development, and lands and realty also contribute to the changing landscape character within the planning area. The BLM establishes VRM class objectives to manage the degree of visual change allowed on the BLM-administered lands caused by these respective decisions when implementing the land use plan.

Table 3.19 below summarizes the potential impacts of Alternatives A through D on visual resources in the planning area.

Table 3.19. Summary of Potential Impacts on Visual Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
VRM Class I (BLM surface acres)	68,300 ¹	68,300	68,300	68,300
VRM Class II (BLM surface acres)	166,800 ¹	473,200	391,500	467,000
VRM Class III (BLM surface acres)	328,200 ¹	72,900	137,700	75,100
VRM Class IV (BLM surface acres)	59,500 ¹	43,800	60,700	47,900
VRM Class I (South Park) (BLM surface acres)	0	0	0	0
VRM Class II (South Park) (BLM surface acres)	0	53,400	50,800	53,400
VRM Class III (South Park) (BLM surface acres)	61,300	7,600	9,600	7,600
VRM Class IV (South Park) (BLM surface acres)	0	400	1,000	400

¹ Alternative A VRM data are only available for 622,800 acres of BLM-administered land.

3.1.13. Lands with Wilderness Characteristics

In accordance with BLM Manual 6310, the BLM conducted an inventory of lands with wilderness characteristics in 2013. This inventory was updated as a result of new information submitted to the BLM in 2015 and found that 48 units possess wilderness characteristics, covering 189,300 acres of the planning area. Many areas previously determined to not possess wilderness characteristics, due to some form of disturbance, were found to be “naturalizing” over time and regaining wilderness characteristics.

No existing law or policy grants priority to preservation of lands with wilderness characteristics over other resources or resource uses, so BLM has the discretion to determine management of these areas in consideration of other priorities. Decisions to **manage lands for wilderness characteristics** would result in the application of management prescriptions intended to protect wilderness characteristics. Areas the BLM would manage for wilderness characteristics and the management prescriptions that would apply within them would vary by alternative.

Management prescriptions allowing surface disturbance within lands possessing wilderness characteristics (regardless of whether they are managed specifically for their wilderness characteristics) have the potential to impact wilderness characteristics. Management

prescriptions that protect resources or prevent surface-disturbing activities generally protect the wilderness characteristics of lands, including size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. The BLM applies more protective management to resources on lands designated as **VRM Class I or II** or **ACECs**.

In contrast, surface-disturbing activities including **mineral development** and **ROW authorizations** for construction or renewable energy development may adversely impact lands with wilderness characteristics.

Table 3.20 below summarizes the potential impacts of Alternatives A through D on lands possessing wilderness characteristics in the planning area.

Table 3.20. Summary of Potential Impacts on Lands with Wilderness Characteristics of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Lands managed for wilderness characteristics (BLM surface acres)	0 Least beneficial	64,300 (protect) 125,000 (maintain) Most beneficial	0 Least beneficial	1,300 Beneficial
VRM Class I or II in lands possessing wilderness characteristics (BLM surface acres)	51,100 Least beneficial	187,900 Most beneficial	128,100 Beneficial	169,000 Beneficial
ACEC designation in lands possessing wilderness characteristics (BLM surface acres)	28,900 Beneficial	40,300 Most beneficial	24,000 Least beneficial	35,300 Beneficial
Impacts from mineral or ROW development	Potential	Lowest potential	Potential	Lower potential

3.2. RESOURCE USES

3.2.1. Recreation

Recreation areas are managed by the BLM as either **SRMAs** or **ERMAs**. In the planning area, the majority of recreation sites are in SRMAs. An SRMA is an administrative unit that recognizes existing or proposed recreational opportunities and setting characteristics for their unique value, importance, and/or distinctiveness. Currently there are two SRMAs in the planning area that encompass 238,300 acres: the Arkansas River SRMA and the Gold Belt SRMA. In 2016, the BLM recorded over 1.5 million visits to the SRMAs, an increase of 28 percent since 2010. The remainder of the planning area is an ERMA and supports dispersed recreation. ERMAs require specific management consideration to address recreational use or

demand, or to address recreation and visitor service program investments. The majority of the ERMA is used for dispersed recreation, including hunting, camping, and four-wheel driving, so many locations in the ERMA do not require a high level of active management.

In 2015, the BLM received a proposal to manage 31 areas within the RGFO as **BCAs**. Under a BCA designation, the BLM would maintain the area in an intact and undeveloped state with high quality wildlife habitats and manage them to support hunting and fishing. Although there are currently no BCAs in the planning area, the BLM reviewed the public proposal and, in accordance with IM 2017-036 (BLM 2017d), analyzed the potential designation of BCAs. In addition, the BLM analyzed managing BCAs as SRMAs with specific hunting and fishing objectives.

A popular recreation activity in the RGFO is **target shooting**. Currently, target shooting is allowed on 641,400 acres of public land within the planning area and prohibited on only 16,800 acres in areas of high visitation to address visitor safety.

Trends show that visitation has increased within SRMAs for nearly every site within the planning area since 2010, and the BLM anticipates future visitation increases at most sites because residential areas continue to grow. Conversely, the data show a general decline in visitation for locations within the ERMA, which may be attributed to the statewide decrease in hunting (CPW 2015) and an increase in visitation to developed areas. The BLM anticipates that population growth will offset these declining visitation trends. Hunters and anglers generally require access to public lands; however, changes on public lands and adjacent lands that may restrict public use, including energy development, mineral exploration and extraction, and ROW expansion, could reduce access to public lands for hunting and fishing.

Table 3.21 below summarizes the potential impacts of Alternatives A through D on recreation in the planning area.

Table 3.21. Summary of Potential Impacts on Recreation of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Special recreation management areas (number / BLM surface acres)	2 / 238,300	4 / 31,900	4 / 31,900	18 / 160,200
Extensive recreation management areas (number / BLM surface acres)	1 / 419,900	8 / 28,800	1 / 4,600	0 / 0
Backcountry conservation areas (number / BLM surface acres)	0 / 0	15 / 63,400	0 / 0	0 / 0
New target shooting prohibitions (BLM surface acres)	0	35	0	2,300

3.2.2. Livestock Grazing

The BLM manages livestock grazing by administering permits and leases to allow grazing on individual allotments. The BLM currently manages 530 allotments across approximately 648,500 acres in the planning area; however, due to topography, distance to water, and other limiting factors, only about 76 percent of this acreage is grazed. The majority of BLM-administered allotments are small, scattered, or surrounded by private lands, making them difficult to manage. Total permitted AUMs is approximately 29,019, provided by 394 active allotments.

Allotment closures reduce the area available to livestock grazing. The livestock grazing capacity of the planning area could decrease if lands within BLM-administered allotments are **identified for disposal** and ultimately disposed of.

Between 2002 and 2013, the BLM conducted LHAs within the grazing allotments for conformance with the BLM *Colorado Public Land Health Standards* (BLM 1997). The assessments found that livestock grazing was the cause for failure to meet the standards in 12 allotments, requiring the BLM to coordinate with the grazing permittee and change the grazing management in these allotments.

Other activities occur on RGFO grazing allotments, and livestock grazing operations are experiencing, and will continue to experience, pressures from the growing population in the planning area. Changes in land use and increased human presence in allotments can adversely impact livestock grazing operations by limiting livestock distribution or range improvement efforts. Management decisions which preclude development activities, such as no **surface occupancy (NSO) stipulations** on fluid mineral leasing or **ROW exclusion areas**, protect livestock grazing by limiting these resource use conflicts.

Table 3.22 below summarizes the potential impacts of Alternatives A through D on livestock grazing in the planning area.

Table 3.22. Summary of Potential Impacts on Livestock Grazing of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Livestock grazing allotment closures (BLM surface acres)	9,700 Moderate impact	96,400 Greatest impact	0 Least impact	0 Least impact
NSO stipulations on fluid mineral leasing within open allotments (BLM surface acres) ¹	16,800 Least beneficial	294,800 Most beneficial	126,100 Moderately beneficial	170,400 Beneficial
Lands identified for disposal in open	81,000 Greatest impact	34,100 Impact	60,000 Impact	0 Least impact

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
grazing allotments (BLM surface acres)				
ROW exclusion areas within allotments (BLM surface acres)	80,800 Beneficial	208,600 Most beneficial	68,300 Least beneficial	68,300 Least beneficial

¹ Including the South Park Leasing Area.

3.2.3. Forestry

Commercial forest product removal can reduce fuel loading and wildland fire risks as well as reduce the incidence of trespass and timber theft in the planning area; therefore, the BLM manages forest products to ensure that harvest levels remain sustainable while ensuring minimal impacts on other resources.

The BLM manages approximately 216,300 acres of commercial forested lands (mixed-conifer forests) and 249,600 acres of woodlands (pinyon pine, juniper, and Gambel oak) in the planning area. Currently, all commercial forest lands are available for forest product harvest. The BLM inventories forests in the planning area annually, and most show indicators of poor health largely due to overcrowding. These conditions make the forests susceptible to stand-replacing fires, disease, and infestation, including mountain pine, spruce bark, and pinyon ips beetles; and dwarf mistletoe.

Commercial timber sales are one method used to thin overcrowded forest stands and improve resiliency and species and age-class diversity. Between 2009 and 2016, the RGFO treated an average of 155 acres each year through commercial timber sales. Timber sales are expected to continue to increase in the planning area.

In special designation areas, the BLM applies protective management for specific resources. The BLM may restrict removal of commercial timber species in these areas if this activity would adversely impact the resource being protected. Areas with these types of restrictions include **lands with wilderness characteristics, SRMAs, BCAs, and ACECs.**

Table 3.23 below summarizes the potential impacts of Alternatives A through D on forestry in the planning area.

Table 3.23. Summary of Potential Impacts on Forestry of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Commercial timber species in lands managed for or to maintain or protect wilderness characteristics (BLM surface acres)	0 Least impact	72,400 Greatest impact	0 Least impact	300 Impact
Commercial timber species in designated SRMAs and/or BCAs	90,400 Greatest impact	25,000 Moderate impact	3,700 Least impact	35,300 Impact
Commercial timber species in designated ACECs (BLM surface acres)	21,100 Impact	42,100 Greatest impact	6,400 Least impact	9,100 Moderate impact

3.2.4. Fluid Minerals

Oil and gas are the primary fluid mineral products produced in the planning area. Key areas of active oil and gas production in the planning area are Weld County in northern Colorado, Yuma County in northeastern Colorado (mostly dry gas), and Las Animas County in southeastern Colorado (mostly coalbed methane). Although not an active oil- and gas-producing region, the BLM and stakeholders identified **South Park**, in Park County, Colorado, as an area where the potential for future oil and gas development raises concerns for water quality, wildlife, public and environmental health, and cultural resources.

As of December 2017, approximately five percent (152,400 acres) of mineral estate managed by the BLM were leased for oil and gas development. Of 568 active federal oil and gas wells in the planning area, 311 were located within the BLM RMP decision area for federal mineral estate, 19 of which were located on BLM-administered surface land. The other 257 federal oil and gas wells consist of those in which the surface location is not on the federal lease (fee/fee/Fed) or wells drilled into U.S. Forest Service leases.

The BLM may apply stipulations on lands and mineral estate within the RGFO that are available for leasing if necessary to protect other resources or human health and safety. These stipulations consist of **NSO**, **controlled surface use**, and **timing limitation** stipulations. WSAs, national parks, and incorporated cities and towns are closed to fluid mineral leasing. Other areas may be **closed to fluid mineral leasing** through the BLM's land use planning process.

The BLM estimated the **number of oil and gas wells** developed and associated **oil and gas production** under each alternative based on trends and forecasts in drilling and production, assessments of oil and gas development potential, and restrictions from fluid mineral leasing closures and stipulations.

Table 3.24 below summarizes the potential impacts of Alternatives A through D on fluid mineral resources in the planning area.

Table 3.24. Summary of Potential Impacts on Fluid Mineral Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Estimated number of oil and gas wells (includes conventional and coalbed methane wells)	936	824	950	955
Oil production (million barrels)	37	29	38	39
Gas production (million cubic feet)	102,188	79,414	105,060	106,086
Closed to fluid mineral leasing in the South Park Leasing Area (BLM mineral acres)	0	11,100	2,700	2,700
NSO stipulations on fluid mineral leasing in the South Park Leasing Area (BLM mineral acres)	1,600	152,400	15,700	79,000

3.2.5. Solid Minerals

Solid minerals include locatable, saleable, and solid leasable (other than coal) minerals. Opportunities to extract these minerals may be adversely affected by BLM decisions to **recommend for withdrawal** or **close** areas to solid mineral development. Lands recommended for withdrawal can only be withdrawn by Congress or the Interior Secretary. Areas may be closed to solid mineral development by law or through BLM planning decisions.

Locatable minerals include most of the metallic minerals as well as certain industrial minerals, and gemstones. Active locatable mineral exploration and mining operations, ranging from placer gold mining to exploration for gemstones and uranium, are located primarily in Boulder, Fremont, Gilpin, Lake, Park, and Teller Counties. More than 1,200 acres in the planning area are withdrawn from locatable mineral entry through prior congressional or secretarial actions.

Mineral materials consist of minerals commonly used in construction applications, such as sand, stone, gravel, pumice, pumicite, cinders, and clay. Construction aggregate is the predominate mineral material produced in the planning area, but other operations produce clay, decorative sandstone, and specialty crushed rock products. The BLM manages active

commercial operations in Chaffee, Custer, Fremont, Las Animas, and Teller Counties. The BLM also manages common use areas (i.e., collection over large areas with less intensive surface disturbance) in Fremont and Huerfano Counties, and has active free use permits (i.e., use of community pits granted to qualified government agencies and organizations) in Fremont and Teller Counties.

Potash, sodium, native asphalt, and bituminous rock are among the **solid leasable minerals** defined by the Mineral Leasing Act of 1920 (as amended). There are no current applications for solid leasable minerals in the RGFO.

Table 3.25 below summarizes the potential impacts of Alternatives A through D on solid minerals in the planning area.

Table 3.25. Summary of Potential Impacts on Solid Minerals of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Newly recommended for withdrawal from locatable mineral entry (BLM mineral acres)	355,500 ¹	2,900	0	2,900
Closed to all mineral material disposal (BLM mineral acres)	348,300 Most adverse	223,000 More adverse	66,600 Least adverse	67,300 Less adverse
Closed to solid mineral leasing (BLM mineral acres)	66,800 Less adverse	279,300 Most adverse	66,600 Least adverse	66,600 Least adverse

¹ Recommended for withdrawal in existing RMPs; however, most of these withdrawals have not been carried out to date and are not anticipated to occur with the continuation of existing management under Alternative A.

3.2.6. Coal

The BLM RGFO conducts and administers lease sales for coal in the planning area in accordance with the Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended. The BLM makes coal resources **available for leasing for surface or underground mining** on a case-by-case basis subject to the coal unsuitability criteria in 43 CFR 3461 and land use planning decisions. Decisions that restrict lands available for coal leasing would adversely affect opportunities to develop coal resources in the planning area.

The planning area has four designated coal regions: Cañon City, South Park, Denver, and Raton Mesa (Carroll 2006; Landis 1959). Table 3.26 reports the acres of federal mineral estate in each coal region.

Table 3.26. Acres of Federal Mineral Estate within Each of the Four Coal Regions in the Royal Gorge Field Office

Coal Region	Acres of Federal Mineral Estate
Denver Basin	383,400
South Park Basin	16,300
Cañon City Basin	0
Raton Basin	255,800

The BLM prepared the *Final Coal Resource and Development Potential Report* (BLM 2015c) describing known coal resources in these designated coal regions and assessing potential for coal resource development. Despite extensive historic development of coal resources in the planning area, there are currently no active coal leases on federal mineral estate. However, the BLM is actively processing a lease application submitted in 2009 for development of 4 million salable tons of federal coal at the New Elk Mine in the Raton Basin west of Trinidad, Colorado. The application was on hold for several years at the applicant's request.

Table 3.27 below summarizes the potential impacts of Alternatives A through D on coal resources in the planning area.

Table 3.27. Summary of Potential Impacts on Coal Resources of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Areas identified as suitable for surface coal mining (BLM mineral acres)	97,440 Beneficial	99,000 Beneficial	100,200 Most beneficial	95,400 Least beneficial
Areas available for underground coal mining (BLM mineral acres)	Not directly Comparable	153,700 Adverse	323,300 Neutral	323,300 Neutral

3.2.7. Renewable Energy

Certain BLM-administered surface lands are available for solar and wind energy development through a competitive leasing (43 CFR 2800) and ROW authorization process (43 CFR 2880). The BLM manages other lands as **exclusion areas** for utility- or non-utility-scale renewable energy development. With the exception of six applications for wind-testing and monitoring projects, one of which resulted in the erection of a meteorological evaluation tower, the BLM RGFO has received no other applications for wind or solar energy development projects. Future renewable energy development is most likely to occur in areas considered to have high potential for wind or solar energy resources.

The planning area has over 5,600,000 acres of lands with **high-potential wind energy resources**, as characterized by the U.S. Department of Energy National Renewable Energy Laboratory (NREL) in the wind resource assessment in the *Wind Energy Resource Atlas of the United States* (DOE 1986) (NREL: 50 m, Wind Power Classes 3-7). Less than 80,000 acres or 1.4 percent of high-potential wind energy lands in the planning area are administered by the BLM. Opportunities for wind energy development on BLM-administered lands are constrained by the dissected and fragmented federal land ownership within the planning area and the challenges of ridge-top development.

The planning area has over 10,890,000 acres of lands with **high-potential solar energy resources**, as characterized by the U.S. Department of Energy NREL (DOE 1986) (NREL: direct normal irradiance 1 kilometer (km), 6.5 kilowatt hours per square meter or greater).

Approximately 485,000 acres or 4.4 percent of the high-potential solar energy lands in the planning area are administered by the BLM. However, the majority of those high-potential solar resources are limited for development due to exclusion factors such as slopes exceeding 5 percent grade as defined in the solar energy development programmatic EIS (BLM 2012b) and poor transmission infrastructure development potential due to low population density.

Table 3.28 below summarizes the potential impacts of Alternatives A through D on renewable energy in the planning area.

Table 3.28. Summary of Potential Impacts on Renewable Energy of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Utility scale development exclusion areas with high wind potential (BLM surface acres)	0 ¹ Least restrictive	82,400 Most restrictive	7,500 Less restrictive	27,800 More restrictive
Non-utility scale development exclusion areas with high wind potential (BLM surface acres)	0 ¹ Least restrictive	54,200 Most restrictive	12,400 Less restrictive	22,200 More restrictive
Utility scale development exclusion areas with high solar potential (BLM surface acres)	476,000 ² More restrictive	514,400 Most restrictive	81,300 Least restrictive	246,200 Less restrictive

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Non-utility scale development exclusion areas with high solar potential (BLM surface acres)	0 ²	373,300 Most restrictive	101,700 Least restrictive	157,300 Moderately restrictive

¹ All BLM-administered surface lands are open to applications for wind energy development under Alternative A. The existing Northeast RMP and Royal Gorge Resource Area RMP, as amended, do not provide any direction regarding non-utility scale renewable energy development.

² Based on exclusion areas for utility-scale development established in the solar energy development Record of Decision (BLM 2012b). The existing Northeast RMP and Royal Gorge Resource Area RMP, as amended, do not provide any direction regarding non-utility scale renewable energy development.

3.2.8. Travel and Transportation Management

The BLM developed a network of motorized routes covering approximately 600 miles in the planning area, taking into consideration resource needs and recreational demand. The Royal Gorge Resource Area RMP (BLM 1996) and the Northeast RMP (BLM 1986), along with subsequent plan amendments, designated BLM-administered lands as **open, limited, or closed to motorized travel**¹ (Table 3.29). The degree to which limitations or restrictions are placed on travel and transportation management varies based on the locations of sensitive resources and the potential for environmental impacts on those resources.

Table 3.29. OHV Travel Management Designations in the Royal Gorge Field Office

OHV Designation	Acres	Percentage of Planning Area
Open	8,500	1%
Closed	68,300	11%
Limited to designated routes	323,000	50%
Limited to existing routes (interim)	258,400	40%
Total	658,200	100%

OHV Off-highway vehicle

The BLM developed and implemented five TMPs in the RGFO designating routes in the areas of highest use, covering approximately 323,000 acres. Approximately 39 percent of the planning area (258,400 acres) is in the “limited to existing” category despite the development of these TMPs, and an additional 7,500 acres are under a temporary closure notice. These BLM-

¹ **Open:** A designated area where all types of off-highway vehicle (OHV) travel is permitted at all times, anywhere in the area, subject only to the operating restrictions set forth in subparts 8341 without restriction (43 CFR 8340.0-5(f)); **Closed:** An area where OHV use is prohibited; **Limited:** An area where OHV use is restricted at certain times, in certain areas, and/or to certain vehicular use. Source: BLM 2016b.

administered areas are not covered by a TMP and therefore may have unresolved or inconsistent management issues that need to be addressed through planning efforts. The Draft Eastern Colorado RMP/EIS identifies areas as open, limited, or closed to motorized travel, focusing on the areas not covered by an existing TMP.

Table 3.30 below summarizes the potential impacts of Alternatives A through D on travel and transportation management in the planning area.

Table 3.30. Summary of Potential Impacts on Travel and Transportation Management of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Open (BLM surface acres)	8,500	0	0	0
Closed (BLM surface acres)	68,300	131,800	68,300	68,300
Limited to designated routes (BLM surface acres)	323,000	343,700	326,100	369,700
Limited to existing routes (interim) (BLM surface acres)	258,400	182,700	263,800	220,200

3.2.9. Lands and Realty

The BLM identifies public lands in the planning area that may meet one or more of the FLPMA Section 203 criteria for **disposal** including lands that are small, unmanageable, isolated, or of limited public value. The Royal Gorge Resource Area RMP (BLM 1996) identified 73,100 acres of public land scattered throughout the planning area as suitable for disposal. The Northeast RMP (BLM 1986) identified 7,900 acres land as suitable for disposal.

The BLM authorizes ROW grants and manages part of the planning area to accommodate ROW facilities, including transmission lines, communication sites, and roads. On average, 25 new ROW grants are authorized each year in the RGFO, many of which are co-located on existing ROW sites. Table 3.31 shows the number and acres of ROWs currently permitted and constructed in the planning area.

Table 3.31. Rights-of-Way in the RGFO

Right-of-Way Type	Number of Cases	Acres
Roads and highways	426	5,293
Electrical power lines (incl. transmission and distribution)	138	3,387
Water pipelines and facilities	234	62,585
Telephone, cable, and fiber optic	78	464
Oil and gas pipelines and facilities	28	198
Railroads and stations	74	37,016
Communication sites	27	64

Right-of-Way Type	Number of Cases	Acres
Other	286	3,935
Total	1,291	112,942

Source: LR2000 reports (BLM 2017e).

Other BLM-administered public lands are managed as **ROW exclusion areas** or **ROW avoidance areas**. ROW grants may not be permitted or may be subject to stringent stipulations in exclusion and avoidance areas, respectively. Areas where ROW development is excluded or avoided in the planning area may include ACECs, SRMAs, and WSAs (see the *Recreation* and *Special Designations* sections).

Table 3.32 below summarizes the potential impacts of Alternatives A through D on lands and realty in the planning area.

Table 3.32. Summary of Potential Impacts on Lands and Realty of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Lands available for disposal (BLM surface acres)	81,000	34,100	60,000	0
ROW exclusion areas (BLM surface acres)	86,200 Moderately restrictive	257,300 Most restrictive	68,300 Least restrictive	68,300 Least restrictive
ROW avoidance areas (BLM surface acres)	N/A ¹	294,800 Most restrictive	65,700 Least restrictive	240,200 Moderately restrictive

¹ Areas called out for avoidance under the existing Northeast RMP and Royal Gorge Resource Area RMP are big game birthing habitat, big game critical winter habitat, VRM Class II areas, areas within ACECs, and developed recreation sites. Acreage for these areas is not currently available.

N/A Not applicable

3.3. SPECIAL DESIGNATIONS

3.3.1. Areas of Critical Environmental Concern

The BLM can designate ACECs during development of an RMP to protect important resource values (biological, cultural, scenic, etc.) or to protect life and safety from natural hazards. The Royal Gorge Resource Area RMP (BLM 1996) designated nine ACECs for a total of approximately 69,500 acres. During the planning process for this RMP/EIS, BLM staff, stakeholders, and the public nominated several additional ACECs. As documented in *Evaluation of Potential ACECs: Relevance and Importance Criteria: April 2019 Draft* (BLM 2019b), the BLM evaluated 15 existing and nominated ACEC to determine if they met the relevance and

importance criteria for designation. Of these 15 areas, nine (101,400 acres) were found to possess relevant and important values.

Under some alternatives, the BLM proposes to designate and provide special management for ACECs to protect their relevant and important values. However, ACEC values are also affected by management decisions related to other program areas that would also apply within ACECs. Management actions that restrict or prohibit surface disturbance generally reduce impacts on values such as wildlife habitat and visual resources. Activities such as vegetation treatments may result in short-term adverse impacts on these ACEC values but could enhance resource values and natural processes over the long term, benefitting the ACEC values.

Table 3.33 below summarizes the potential impacts of Alternatives A through D on ACECs in the planning area.

Table 3.33. Summary of Potential Impacts on Areas of Critical Environmental Concern of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Number and size of designated ACECs (BLM surface acres)	9 ACECs 69,500 acres Moderately beneficial	8 ACECs 101,100 acres Most beneficial	6 ACECs 34,800 acres Least beneficial	8 ACECs 46,300 acres Moderately beneficial

3.3.2. National and State Scenic and Historic Byways

The U.S. Secretary of Transportation designates national scenic and historic byways through the America's Byways program. The Colorado Scenic and Historic Byways Commission designates state scenic and historic byways. There are 25 designated byways in Colorado, 14 of which are located in the planning area, as indicated in Table 3.34. The BLM has a direct management role in only two of these byways: the Gold Belt Tour National Scenic and Historic Byway and the Collegiate Peaks State Scenic and Historic Byway. Any management changes would occur through future updates to byway corridor management plans; the Eastern Colorado RMP/EIS will not designate new byways or define new management direction for existing national and state scenic and historic byways in the planning area.

Table 3.34. National and State Scenic and Historic Byways in the RGFO

Byway Name	Length in Miles	Type	BLM Management Role
Cache La Poudre – North Park Scenic and Historic Byway	101	State	None
Collegiate Peaks Scenic and Historic Byway	57	State	Direct
Frontier Pathways Scenic and Historic Byway	103	National	None
Gold Belt Tour National Scenic and Historic Byway	131	National	Direct
Guanella Pass Scenic and Historic Byway	22	State	None

Byway Name	Length in Miles	Type	BLM Management Role
Highway of Legends Scenic and Historic Byway	110	State	None
Lariat Loop Scenic and Historic Byway	40	State	None
Mount Evans Scenic and Historic Byway	49	State	None
Pawnee Pioneer Trails Scenic and Historic Byway	128	State	None
Peak to Peak Scenic and Historic Byway	55	State	Indirect ¹
Santa Fe Scenic and Historic Byway	184	National	Indirect
South Platte River Trail Scenic and Historic Byway	19	State	Indirect
Top of the Rockies Scenic and Historic Byway	115	National	Indirect
Trail Ridge Road – Rocky Mountain National Park	48	National	Indirect

Source: BLM 2015b.

¹ Indirect management is where BLM-administered lands are present in the area of the byway and may be part of the scenery (i.e., the visual resources) from the byway, but the byway does not pass directly over BLM surface lands.

Where BLM-administered lands are located within the viewshed of scenic byways, **VRM class** is a key determinant of the extent to which activities on BLM-administered surface lands would be allowed to alter the scenic quality of the land because the VRM objectives determine what degree of change to the visual character of the landscape is permissible. Table 3.35 shows the VRM classes by mileage of byway for each alternative.

Table 3.35. VRM Class by Miles of Byway for each Alternative

Impact Type	Alternative A ¹ (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Miles of byway in VRM Class I (BLM surface acres)	0	<1	<1	<1
Miles of byway in VRM Class II (BLM surface acres)	38	37	36	37
Miles of byway in VRM Class III (BLM surface acres)	3	6	6	5
Miles of byway in VRM Class IV (BLM surface acres)	0	0	0	0

¹ Alternative A VRM data are not available for the entire planning area.

The scenic quality of byway viewsheds may also be affected by BLM decisions for managing mineral, renewable energy, and ROW development. Closure, no surface-occupancy, or withdrawal of federal mineral estate in byway viewsheds would eliminate visual impacts from federally permitted mineral development, but would still allow for visual impacts from private surface uses.

Table 3.36 below summarizes the potential impacts of Alternatives A through D on national and state scenic and historic byways in the planning area.

Table 3.36. Summary of Potential Impacts on National and State Scenic and Historic Byways of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Byway scenic impacts	Potential	Lowest potential	Potential	Potential

3.3.3. National Trails

The National Trails System Act establishes a system of national trails throughout the United States under four categories: recreation, scenic, historic, and connecting or side trails. Although many designated national recreation trails pass through the planning area, no portion of these trails cross BLM-administered land, either surface or mineral estate, and the BLM does not have the legal authority to influence their management. The Santa Fe National Historic Trail is the only designated national trail on BLM-administered land in the planning area. This trail is managed by the National Park Service in cooperation with other land managers, including the BLM. Two additional branches of the Santa Fe Trail as well as the Overland and Cherokee Trails are under consideration for national designation. Segments of these trails are present on BLM-administered land in the planning area and are currently managed as historic properties but do not yet have national trail designation.

Actions that have the potential to result in **national trail impacts** on BLM-administered lands in the planning area include mineral and renewable energy development, livestock grazing, increased public and commercial access for recreation, and land disposal. As the majority of Colorado recreationists participate in trail activities (CPW 2014), it is possible that recreational trails that cross BLM-administered land within the planning area could be designated as national recreational trails in the future.

Table 3.37 below summarizes the potential impacts of Alternatives A through D on national trails in the planning area.

Table 3.37. Summary of Potential Impacts on National Trails of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Impacts on national trails	Highest potential	Unlikely	Low potential	Potential

3.3.4. Wild and Scenic Rivers

The Royal Gorge Resource Area RMP (BLM 1996) found segments of the Arkansas River and Beaver Creek to be suitable for inclusion in the National Wild and Scenic River System (NWSRS). The RGFO continues to protect the outstandingly remarkable values of segments

found suitable by the 1996 Royal Gorge Resource Area RMP, but does not have any congressionally designated wild and scenic rivers (WSRs) or stream segments within its boundaries. Congress can designate rivers as wild, scenic, or recreational to preserve their free-flowing condition and to protect and enhance their outstandingly remarkable scenic, recreational, geologic, fish, wildlife, historic, cultural, and other values. As part of the planning process for the Eastern Colorado RMP/EIS, the BLM conducted a study of the rivers and streams in the RGFO and found 112 miles of stream segments eligible for inclusion in the NWSRS and 60 miles of stream segments **suitable for inclusion**.

Mining reclamation projects have improved water quality since 1996 and contributed to the Arkansas River receiving Gold Medal designation from the CPW Commission. CPW's installation of sediment catchment basins to reduce sediment loading in the Arkansas River has further improved water quality. Managing segments as suitable for inclusion in the NWSRS affords protective management for maintaining WSR conditions and values. WSR segments, whether or not they are managed as suitable for inclusion in the NWSRS, can also receive protection where they flow through **ACECs, VRM Class I and II** areas, and **WSAs**, as well as from restrictions placed on **fluid mineral development**. Overlap with these designations, or fluid mineral development restrictions, protects the free-flowing characteristics, water quality, outstandingly remarkable values, and characteristics of the rivers that resulted in their tentative classification as wild, scenic, or recreational.

Table 3.38 below summarizes the potential impacts of Alternatives A through D on WSRs in the planning area.

Table 3.38. Summary of Potential Impacts on Wild and Scenic Rivers of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
WSR suitable segments / miles	5 / 45 Beneficial	19 / 111 Most beneficial	0 / 0 Least beneficial	5 / 60 Beneficial
WSR fluid mineral restrictions	Not applicable	Closed	Not applicable	NSO stipulation
WSR/VRM Class I and II overlap (acres)	15,400 Beneficial	35,600 Most beneficial	Not applicable	18,300 Beneficial
WSR/ACEC overlap (acres)	7,500 Beneficial	18,800 Most beneficial	Not applicable	6,400 Beneficial
WSR/WSA overlap (acres)	3,800 Beneficial	8,500 Most beneficial	Not applicable	1,300 Moderately beneficial

3.3.5. Wilderness and Wilderness Study Areas

To be considered wilderness under the National Wilderness Preservation System, federal lands must be in a generally natural condition; have outstanding opportunities for solitude or primitive and unconfined recreation; be at least 5,000 acres or large enough to preserve and use as wilderness; contain features of scientific, scenic, or historical value; and be managed to preserve their wilderness character. The RGFO does not currently contain any wilderness areas, but it does contain five **WSAs** (not including Browns Canyon WSA which is part of a separate planning effort) that are awaiting designation or release by Congress. WSAs are areas that meet wilderness eligibility requirements but Congress has not acted on the managing agency's recommendation. Until these lands are designated or released by Congress, the BLM manages WSAs to maintain or enhance wilderness characteristics. These areas have been managed as WSAs for the past 22 years and are trending toward improvement of their natural condition.

Management actions that restrict or prohibit surface disturbance help to conserve the naturalness of wilderness and the wilderness characteristics of WSAs. The BLM will continue to manage all WSAs within the planning area to maintain or enhance wilderness characteristics in accordance with BLM Manual 6330.

Table 3.39 below summarizes the potential impacts of Alternatives A through D on wilderness and WSAs in the planning area.

Table 3.39. Summary of Potential Impacts on Wilderness and Wilderness Study Areas of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Acres of WSAs	68,300	68,300	68,300	68,300

3.4. SOCIAL AND ECONOMIC CONDITIONS

3.4.1. Public Health and Safety

The BLM participates in the **abandoned mine lands** program, which involves identifying and characterizing inactive mine sites; inventorying hazards or potential hazards to human health, safety, and the environment; and storing data in the national Abandoned Mine Site Cleanup Module database. Sites within the planning area that have inventoried hazards or potential hazards and are located at the urban interface are prioritized for remediation by the BLM. Most abandoned mine features in the planning area are located at the urban interface in historic mining districts. The RGFO has developed partnerships with local regulatory agencies and watershed protection groups to help with remediation on abandoned mine lands across the state.

Hazardous materials in the planning area generally include but are not limited to petroleum products (fuels and lubricants), solvents, surfactants, paints, explosives, batteries, acids, biocides, gases, and antifreeze. Many of these products are legitimately brought onto public lands for authorized development projects; however, the unauthorized dumping of hazardous and household wastes continues to be problematic. There are no approved hazardous waste disposal facilities within the planning area.

As of December 2017, the planning area contained over 5,600 abandoned mine and hazardous material features, including 4,300 features that had not yet been assessed.

The RGFO currently manages all **geologic hazards** on a case-by-case basis. Landslides and rock falls are limited in eastern Colorado due to its gentle slopes and semi-arid climate; however, the areas along the Hogback at the foot of the Front Range are susceptible to sliding, as are some of the Permian and Cretaceous rocks and Tertiary volcanic rocks found in the planning area. Rock glaciers in Huerfano County are considered a geologic hazard due to their instability (Giardino, Shroder, and Lawson 1984). The Raton Basin area has been identified by the USGS as having potential for hazardous conditions associated with induced seismicity from oil and gas activities (USGS 2017).

Table 3.40 below summarizes the potential impacts of Alternatives A through D on public health and safety in the planning area.

Table 3.40. Summary of Potential Impacts on Public Health and Safety of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Abandoned mine lands impacts	Least beneficial	Beneficial	Beneficial	Beneficial
Hazardous materials impacts	Least beneficial	Beneficial	Beneficial	Beneficial
Geologic hazards impacts	Potential	Lowest potential	Potential	Potential

3.4.2. Social and Economic Values

BLM-administered lands in the planning area provide many goods and services that have social and economic value, including livestock grazing, mineral development, travel and tourism, forestry, tribal uses, and wildlife and ecosystem services. Some of these environmental goods and services are traded in markets, and their **market value** can be revealed through the unit prices and quantity sold.

The total market value of cattle and calves sold in the grazing economic analysis area in 2012 was \$53.6 million with the largest cattle count numbers recorded in Pueblo County (USDA

2012). There were 20,098 billed AUMs of livestock forage in the planning area in 2014 (BLM 2017f).

Weld County accounts for over 80 percent of Colorado's oil production and over 15 percent of Colorado's gas production. In 2014, the oil and gas industry in the state provided \$7.6 billion to local economies by way of total employee compensation (Wobbekind and Lewandoski 2015). Other minerals with economic value found in the planning area include specialty aggregate, uranium resources, and coal; however, there is only one pending lease application for coal and no current applications for solid leasable minerals in the planning area.

Travel and tourism spending in the recreation economic analysis area totaled over \$1.59 billion in 2015, 78 percent of which was spent in El Paso County (Dean Runyan Associates 2016). Recreationists in the planning area often spend additional money on items such as gas, equipment, and food and drink during recreational activities, which increases the total economic contribution from recreation.

Forest and vegetative products in the RGFO that have economic value include saw timber, fuelwood, decorative wood, corral poles, fence posts, teepee poles, Christmas trees, transplants, boughs, pinyon nuts, native seed, and biomass. The total economic value of these products depends on the demand for the products, which has generally increased throughout the planning area over the last decade. There are ten small sawmills in the planning area and eleven independent logging contractors who have expressed interest in purchasing BLM timber products.

Other goods and services provided by BLM-administered lands in the planning area, including recreational opportunities, traditional tribal uses, ecological processes, and habitat for unique species, have **nonmarket value**, meaning they provide benefits that do not involve market transactions and therefore lack prices. Estimating nonmarket values can be more challenging methodologically; however, the BLM acknowledges that they are real and can be substantial (BLM 2013).

Different stakeholder organizations and individuals have widely varying **social values** that they place on the BLM's public resources and the effects of various management policies and actions. Their views reflect the different cultural as well as economic linkages people have to public lands. Types of stakeholder groups in the planning area include but are not limited to hunter's and angler's groups; mountain biking, off-highway vehicle (OHV), and other recreation-focused groups; livestock grazing/cattlemen's groups; mineral and mining groups; wildlife, watershed, open space, and other environmentally focused groups; and community vitality groups.

Table 3.41 below summarizes the potential impacts of Alternatives A through D on social and economic values in the planning area.

Table 3.41. Summary of Potential Impacts on Social and Economic Values of Alternatives A, B, C, and D

Impact Type	Alternative A (No Action)	Alternative B (Natural Processes)	Alternative C (Human Demand)	Alternative D Preferred Alternative (Human Ecoregion)
Market value impacts	High potential to maintain or increase market values associated with livestock grazing, recreation, and oil and gas development. Low potential to increase market values from forest products.	Highest potential to decrease market values associated with resource utilization such as energy development and mineral materials, forest products, livestock grazing, and renewable energy.	High potential to increase market values associated with resource utilization such as energy and mineral development, forest products, livestock grazing, and renewable energy.	Potential to maintain or increase local community demand for forest products. Same potential to increase market values associated with livestock grazing as Alternative C. Highest potential to increase market values associated with oil and gas development.
Nonmarket value impacts	High potential to reduce non-use values associated with open spaces. Potential to reduce ecosystem service values in the long-term if status quo management is unable to prevent degradation of ecosystem or resource conditions.	Highest potential to maintain or increase non-use values and ecosystem services due to the emphasis on resource conservation.	Highest potential to decrease non-use values and ecosystem services due to the emphasis on resource utilization.	Potential for maintaining or somewhat increasing nonmarket values relative to Alternatives A and C due to protection for ecological and sensitive resource values while allowing for resource utilization.
Social value impacts	Potential to negatively impact wildlife and resource conservation stakeholders. Potential to be favorably received by livestock grazing stakeholders, mineral utilization stakeholders and some recreation stakeholders.	Highest potential to positively impact wildlife and resource conservation stakeholders and non-OHV recreation stakeholders. High potential to be less favorably received by livestock grazing, mineral utilization, and renewable energy stakeholders.	Highest potential to negatively impact wildlife and resource conservation stakeholders. Highest potential to be favorably received by mineral utilization, renewable energy, and livestock grazing stakeholders.	Highest potential to positively impact community vitality stakeholders. Potential to be favorably received by recreation stakeholders who prefer developed recreation opportunities. Potential to be favorably received by wildlife and resource conservation stakeholders.

3.5. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

CEQ and NEPA regulations require that the discussion of environmental consequences include a description of “any irreversible or irretrievable commitment of resources which would be involved in the proposal should it be implemented” (40 CFR 1502.16). An *irretrievable* commitment of resources is one that results in the loss of resources for a certain period of time. For example, the construction of a road will result in a loss of livestock or wildlife forage for as long as the road remains. An *irreversible* commitment of resources is one that results in the permanent loss of those resources. This can occur, for example, when the production of oil and gas depletes nonrenewable resources in the planning area. The BLM requires BMPs, reclamation, and mitigation to reduce the magnitude and scope of irretrievable and irreversible resource impacts of actions taken or authorized by the agency.

3.5.1. Surface-disturbing Activities

Decisions made in this document that result in surface-disturbing activities, such as the development of minerals, renewable energy, or roads and utility corridors, may cause an irretrievable and irreversible loss of soil resources through the removal of vegetation, which could accelerate soil erosion, decrease productivity, and permanently damage soil structure. Development of new soil is a very slow process, and once lost, soil productivity may not be recovered.

Water resources can also be damaged by surface-disturbing activities, through water depletion, increased sedimentation, and pollution. Surface-disturbing activities may result in the irretrievable loss of special status species habitat until the area is successfully restored. Disturbance of highly sensitive cultural or tribal resources are typically irreversible. This could occur from all activities that disturb the surface or subsurface. Surface-disturbing activities could permanently destroy paleontological resources prior to their discovery and documentation, resulting in an irretrievable loss of the opportunity to collect scientific data. Mineral or road and trail development could irretrievably affect the naturalness of inventoried lands with wilderness characteristics.

3.5.2. Livestock Grazing and Recreation

Livestock grazing may result in the irretrievable loss of vegetation for a period of time. Improper livestock grazing may also result in the degradation of riparian and wetland areas. Similar irretrievable impacts may occur with recreation activities. Impacts are likely to be irretrievable but not irreversible, as the habitat could eventually be restored; however, any resulting spread of invasive plants and noxious weeds could become irreversible if not properly

managed. Inventoried lands with wilderness characteristics could also be irretrievably affected through loss of naturalness from livestock grazing range improvements.

3.5.3. Facility Development

Development of recreational facilities, oil and gas wells, or other structures within the field office may irretrievably degrade the scenic quality of natural settings, affecting the quality of recreation or limiting public use.

3.5.4. Land Tenure Adjustments

Land tenure adjustments may result in the irretrievable loss of lands when parcels are transferred from BLM ownership to state or private management, although these lands may be available for public acquisition in the future.

3.5.5. Relative Impacts of Alternatives

Decisions that favor increased development of routes, renewable energy, ROWs, or minerals are more likely to cause irretrievable and irreversible impacts. These are most likely to occur under Alternatives A or C. Alternative D would have fewer impacts, because it has more restrictions than Alternatives A or C for engaging in surface-disturbing activities. Alternative B has a number of conservation and mitigation measures that would protect resources in the planning area to the greatest extent from irreversible and irretrievable impacts.

3.6. UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are those that remain once all mitigation measures have been implemented or for which there are no mitigation measures. NEPA (Section 102(2)) requires identifying any adverse environmental effects that cannot be avoided if the proposal is implemented. Although they are generally more evident during the implementation phase of planning (see Chapter 1), there are some unavoidable adverse impacts that can be assessed through this RMP/EIS. In particular, management actions aimed at protecting a certain resource may have unavoidable adverse impacts on other resources in the planning area. For example, protections associated with cultural, tribal, and paleontological resources; areas of low VRM class; lands with wilderness characteristics; and special designations restrict mineral and renewable energy development, creating unavoidable adverse impacts on those activities. Other unavoidable, adverse impacts that may occur as a result of the decisions in this document are listed below:

- Fugitive dust from surface disturbance, smoke from prescribed fires, and emissions from development in the planning area may cause unavoidable adverse impacts on eastern Colorado's air quality.

- Surface-disturbing activities may cause unavoidable soil erosion, runoff, and increased sedimentation in nearby water sources.
- Development that removes wildlife habitat could result in unavoidable adverse impacts on terrestrial, aquatic, or special status species.
- The spread of noxious weeds may be unavoidable after disturbance in some vegetative communities.
- Land uses such as mineral development may introduce new wildfire ignition sources.
- Damage to cultural and paleontological resources may be unavoidable if these resources are not discovered during pre-construction surveys or during soil excavation for permitted development activities.

3.7. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Section 102(2)(C) of NEPA requires a discussion of the relationship of short-term local uses of the environment and the maintenance and enhancement of long-term productivity of resources. Appendix L, *Glossary*, defines “short-term” as occurring only during or immediately after implementation and “long-term” as occurring for an extended period after implementation (several years or more).

BLM-authorized activities in the planning area that would emit greenhouse gasses, the largest proportion of which are likely to be generated by oil and gas drilling and completions, would add to the regional and global budget of greenhouse gases in the atmosphere. Although greenhouse gas emissions in the planning area cannot be linked to site-specific biophysical impacts, they would likely contribute to long-term climate change effects such as warmer spring temperatures and more rapid snowmelt, greater susceptibility of forests to pests and diseases, and more frequent and severe wildfires. These effects would not vary measurably by alternative. Based on projected well counts for each alternative (Richter 2018), more oil and gas wells would be developed under BLM jurisdiction for Alternative C than the other alternatives, which would likely result in the most greenhouse gas emissions.

Short-term use of lands to conduct vegetation or fuel treatments could increase the long-term productivity of the landscape by helping to establish and maintain native vegetation communities and decreasing the risk of high-intensity wildfires.

BLM-authorized mineral, renewable energy, and ROW development and the development of recreation sites would decrease the long-term productivity of local ecosystems through removal of vegetation, spread of noxious weeds, increased erosion and sedimentation, displacement of wildlife, and loss and fragmentation of wildlife habitat. Impacts on the productivity of disturbed areas are likely to persist throughout the life of the activity and subsequent reclamation, which could be decades. Regulatory requirements, BMPs, and conditions of approval applied to

specific resource use authorizations within the planning area would avoid, minimize, or mitigate impacts on long-term productivity under all alternatives to the extent required by law, but would not eliminate them entirely. Factors such as noxious weed invasion, undesirable climatic conditions (e.g., drought), or soils with low reclamation potential may extend the time required to reclaim disturbed areas, increasing the duration of diminished ecological productivity.

The development and presence of infrastructure could also diminish the landscape's capacity to provide for desired recreational opportunities, except when the infrastructure is developed specifically to enhance recreational opportunities (e.g., development of trailhead facilities or campgrounds in SRMAs). Other types of infrastructure development would typically have long-term adverse impacts on recreation, as visitors may prefer natural settings.

Alternative B would generally result in fewer long-term adverse impacts on ecosystem productivity by applying the most restrictions on activities that degrade or remove natural resources and prioritizing ecosystem function when implementing vegetation treatments and other actions to restore natural processes and habitats. Restrictions on mineral and energy development, forest product harvest, and livestock grazing would decrease the productivity of public lands for these uses during the planning period, but the inherent productivity of the landscape would likely remain unchanged if such uses were authorized in the future.

Alternative D applies less restrictive protections on resource use activities than Alternative B, with additional consideration for the priorities of local communities and management challenges specific to different regions within the planning area. Alternative D allows most short- and long-term uses of resources when consistent with community priorities, but also establishes recreation management areas and special designation areas to prioritize the protection of resource values in specific areas.

The BLM could authorize the highest levels of mineral development under Alternative C, which would permanently increase the availability of fossil fuels and minerals for future use. Forest product harvest would occur at similar levels under all alternatives, which could decrease the availability of timber and other products until stands regenerate, but would generally increase the long-term productivity of forests. Alternative A would have similar effects as Alternative C by making large portions of the planning area available for resource use.

CHAPTER 4. CONSULTATION AND COORDINATION

This chapter documents the BLM’s public outreach, consultation, and coordination efforts throughout the preparation of the Eastern Colorado RMP/EIS.

4.1. PUBLIC INVOLVEMENT AND SCOPING

In developing this Draft RMP/EIS, the BLM solicited public input during envisioning, public scoping, and public review of the *Preliminary Alternatives Report* (BLM 2017a) and the *Basis for Analysis* (BLM 2017b) as described below. The BLM’s public outreach and collaboration are ongoing throughout the development of this RMP/EIS.

4.1.1. Envisioning Meetings

Public outreach for the Eastern Colorado RMP/EIS began with seven in-person and two online envisioning meetings held in May and June 2015 (Table 4.1.). During these meetings, the BLM invited members of the public to share their vision for how BLM-administered public lands should be managed and discuss the importance of those lands for the future of their communities. The results of these meetings were published in the *Eastern Colorado Resource Management Plan Envisioning Report* (Casey 2016) and were considered during development of the alternatives in this RMP.

Table 4.1. Community Engagement (Envisioning) Meeting Attendance

Date	Location	Number of Attendees
May 18, 2015	Greeley	5
May 19, 2015	Denver/Golden	29
May 20, 2015	Fairplay	23
May 26, 2015	Salida	34
May 27, 2015	Leadville	11
June 2, 2015	Walsenburg	38
June 3, 2015	Cañon City	37
May 28, 2015	Online	3
May 28, 2015	Online	1
Total		181

Source: Casey 2016.

4.1.2. Scoping Process

The BLM formally initiated the external scoping process for the Eastern Colorado RMP/EIS on June 1, 2015, with publication of a notice of intent in the *Federal Register* (80 FR 31063). This began a 60-day public scoping period, during which the BLM released the preliminary planning

issues identified by the BLM interdisciplinary team (IDT) for public review. The formal public scoping period ended on July 31, 2015; however, the BLM considers all public comments received throughout the planning process.

The BLM hosted eight scoping meetings over a one-month period in June and July 2015 (Table 4.2). These meetings gave the public the opportunity to learn about the RMP, meet the BLM RGFO staff, and identify additional planning issues. The results of these meetings were published in the *Scoping Summary Report for the Eastern Colorado RMP* (BLM 2015a).

Table 4.2. Public Scoping Meeting Attendance

Date	Location	Number of Attendees
June 15, 2015	Golden	37
June 16, 2015	Greeley	7
June 23, 2015	Salida	36
June 24, 2015	Fairplay	22
June 25, 2015	Leadville	3
June 29, 2015	Cañon City	56
June 30, 2015	Walsenburg	28
July 14, 2015	Colorado Springs	37
Total		226

Source: BLM 2015a.

All meetings were open houses, which allowed members of the public to talk directly with BLM employees and obtain forms for submitting written comments. The BLM received 396 written comment letters (submissions) containing 1,626 discrete comments.

4.1.3. Public Review of the Preliminary Alternatives and Basis for Analysis

The BLM released the *Preliminary Alternatives Report* (BLM 2017a) and the *Draft Basis for Analysis* (BLM 2017b) for the Eastern Colorado RMP/EIS on March 8, 2017. The *Preliminary Alternatives Report* described four preliminary management alternatives. The *Draft Basis for Analysis* described methods for analyzing the potential impacts of each alternative. The review period for these documents lasted through May 5, 2017. The BLM held eight public meetings during the review period (Table 4.3).

Table 4.3. Meeting Attendance during Public Review of the *Preliminary Alternatives Report* and the *Draft Basis for Analysis*

Date	Location	Number of Attendees
April 4, 2017	Denver	21
April 5, 2017	Fairplay	4
April 6, 2017	Salida	43
April 11, 2017	Cañon City	17
April 12, 2017	Colorado Springs	18
April 13, 2017	Walsenburg	27
April 19, 2017	Greeley	6
April 20, 2017	Leadville	0
Total		136

Source: BLM 2017c.

During the public review period, the BLM received 368 unique comment letters—including one petition with 1,231 signatures—and 1,162 form letters. The BLM analyzed these comments, considered any substantive issues raised, and revised the alternatives and analytical methods accordingly where warranted. More information about these comments and the BLM's responses is in *Preliminary Alternatives and Draft Basis for Analysis Comment Report for the Eastern Colorado RMP* (BLM 2017c).

4.1.4. Project Website

The BLM maintains a public website for the Eastern Colorado RMP/EIS, which has background information about the project, a timeline, information about how the public can participate, maps and photos of the planning area, and downloadable versions of documents created during the planning process. The address of the website is <https://go.usa.gov/xQcZT>.

4.1.5. Postcards and Newsletters

In May 2015, the BLM sent a postcard to over 2,100 individuals, agencies, and organizations, notifying them of the dates and locations for envisioning and scoping meetings and telling them how to get further information. Based on the results of this mailing, the BLM updated the list and sent out a second postcard prior to public review of the *Preliminary Alternatives Report* and *Draft Basis for Analysis*. This postcard provided information on how to submit comments on these two documents. Postcards are an ongoing outreach tool during RMP development.

The BLM writes newsletters throughout the planning process, posts them on the Eastern Colorado RMP/EIS website, and sends out notices when they are available through the project mailing list. The newsletters give updates on the planning process and information about how the public can participate. They also occasionally profile members of the planning team or projects related to RMP development.

4.1.6. Media Releases and News Articles

The BLM wrote three press releases during development of the Draft RMP/EIS. The first press release, dated May 6, 2015, published the schedule for the envisioning meetings and invited public participation. The second press release, dated June 1, 2015, announced public scoping and invited the public to attend the first seven scoping meetings. The BLM released a follow-up press release on July 6, 2015, announcing the addition of an eighth scoping meeting in Colorado Springs.

Press releases are an ongoing part of the planning process. The BLM posts each press release to the RGFO website; the Eastern Colorado RMP/EIS project website; and sends it to print, television, radio, web media, and congressional contacts in the planning area for further distribution. Copies of press releases related to development of the Draft RMP/EIS can also be found in the *Scoping Summary Report for the Eastern Colorado RMP* (BLM 2015a).

Entities other than the BLM released several news articles about the Eastern Colorado RMP/EIS in local newspapers or on local radio and television outlets. These articles gave information about the Eastern Colorado RMP/EIS planning process and how the public could participate. The BLM expects that externally produced news articles about the RMP/EIS will continue to be released throughout its development.

4.2. CONSULTATION AND COORDINATION

Because the Eastern Colorado RMP/EIS pertains to a large amount of public land in Colorado, the BLM coordinates with a variety of organizations who have interests in the planning area during RMP/EIS development. These organizations are largely governmental bodies with responsibility for creating, administering, and monitoring policy on public lands within the planning area. Consultation with these parties occurs throughout development of the RMP/EIS.

4.2.1. Tribes

Executive Order 13175, *Consultation and Coordination With Indian Tribal Governments*, requires federal agencies to coordinate and consult on a government-to-government basis with sovereign Native American tribal governments whose interests may be directly and substantially affected by activities on federally administered lands. Consultation with federally recognized Native American tribes is also required under NEPA and FLPMA. Additionally, there are numerous laws, regulations, and guidance requiring tribal consultation to identify any Native American cultural values, religious beliefs, or traditional practices that could be affected by BLM actions on federal lands. Below are the tribes the BLM consults with during the Eastern Colorado RMP/EIS planning process.

- | | |
|--|--|
| <ul style="list-style-type: none"> • Apache Tribe of Oklahoma • Cheyenne and Arapaho Tribes of Oklahoma • Cheyenne River Sioux Tribe • Comanche Nation of Oklahoma • Crow Creek Sioux • Eastern Shoshone • Jicarilla Apache Nation • Kiowa Tribe of Oklahoma | <ul style="list-style-type: none"> • Northern Arapaho Tribe • Northern Cheyenne Tribe • Northern Ute Tribe • Oglala Sioux Tribe • Pawnee Tribe • Rosebud Sioux Tribe • Southern Ute Tribe • Standing Rock Lakota Tribe • Ute Mountain Ute Tribe |
|--|--|

The BLM initiated tribal consultation for the Eastern Colorado RMP/EIS in 2014 by inviting the Native American tribes with interest in the planning area (listed above) to be cooperating agencies. No tribes accepted cooperating agency status. Table 4.4 shows a timeline of the BLM’s tribal consultation activities for the Eastern Colorado RMP/EIS. Tribal consultation and related actions will continue throughout the planning process.

Table 4.4. BLM’s Activities Pertaining to Native American Tribal Consultation

Consultation Topic/Activity	Date Letter and Email Were Sent	Date of Follow-up Email	Meeting Date	Result
Cooperating agency invitation	July 22, 2014	None	Not applicable	No responses
Initial outreach	May 26, 2015	None	Not applicable	No responses
Scoping pre-alternatives	December 1, 2015	January 5, 2016	Not applicable	Discussion with Northern Arapaho
Areas of critical environmental concern	December 15, 2015	January 27, 2016	Not applicable	Northern Arapaho would like ecological areas considered
Wild and scenic rivers	December 7, 2015	January 11, 2016	Not applicable	Concern about increased visitation from Northern Cheyenne
Preliminary alternatives	April 4, 2017	June 7, 2017	Not applicable	No responses
Meeting with Ute Tribes	Not applicable	Not applicable	July 19-20, 2016	Northern and Southern Ute would like ecological landscapes and sensitive areas within them considered
Meeting with Ute Tribes	Not applicable	Not applicable	October 13, 2016	Not applicable
Meeting with Ute Tribes	Not applicable	Not applicable	August 29, 2017	Not applicable
Preferred alternative	April 25, 2018	May 29, 2018	Not applicable	No responses

4.2.2. Colorado State Historic Preservation Office

The BLM invited the Colorado State Historic Preservation Office to be a cooperating agency, but it declined. The BLM gave the Draft RMP/EIS to the State Historic Preservation Office concurrently with the document's release to the public.

4.2.3. U.S. Fish and Wildlife Service

To comply with Section 7(c) of the ESA, the BLM coordinated with the USFWS early in the planning process. The BLM will consult with the USFWS to develop a draft biological assessment, which will be prepared after public comments are received on the Draft RMP/EIS.

4.2.4. Cooperating Agencies

Cooperating agencies are federal, state, or local government agencies or Native American tribes that enter into a formal agreement with the BLM to help develop the environmental analysis for the Eastern Colorado RMP/EIS. The BLM invited 91 agencies to be cooperating agencies; of these, the following 24 signed formal memoranda of understanding with the BLM to share knowledge and resources throughout development of the RMP.

- National Park Service
- U.S. Department of Agriculture, Forest Service
- U.S. Environmental Protection Agency
- Colorado Department of Agriculture
- Colorado Department of Natural Resources
- Colorado Department of Public Health and Environment
- Aurora
- Boulder County
- Buena Vista
- Chaffee County
- Colorado Springs Utilities
- Fremont County
- Crowley County
- Denver Water
- Gilpin County
- Lake County
- Las Animas County
- Park County
- Pueblo Board of Water Works
- Upper Arkansas Water Conservancy District
- Upper South Platte Water Conservancy District
- Westcliffe
- Silver Cliff
- Southeastern Water Conservancy District

The BLM held an initial cooperating agency meeting during the scoping period for the Draft RMP/EIS to familiarize cooperators with the RMP development process. The BLM held three workshops with the cooperating agencies in November and December 2016 for them to comment

on the preliminary alternatives and identify concerns or issues. The BLM revised the preliminary alternatives based on those comments prior to releasing the *Preliminary Alternatives Report* (BLM 2017a) to the public.

Following public review of the *Preliminary Alternatives Report*, the BLM held two meetings with the cooperating agencies in June and August 2017 to give an overview of public comments and identify resulting changes to the alternatives. In addition, the BLM held a meeting in July 2017 that focused specifically on issues pertaining to WSRs.

4.2.5. Resource Advisory Council

In accordance with FLPMA, the Secretary of the Interior appoints members to the Rocky Mountain Resource Advisory Council (RAC) to provide advice or recommendations to BLM management. The RAC consists of 15 members representing three different areas of expertise: (1) public land ranching and commercial interests; (2) environmental conservation, archaeological/historical conservation, and dispersed recreation; and (3) state or other governmental agencies, tribes, and academic institutions. The RAC operates on the principle of collaborative decision-making, striving for consensus before making official recommendations concerning the planning and management of BLM-administered land, mineral estate, or resources in the planning area.

The BLM met with the RAC on August 20, 2014, to discuss the upcoming RMP and familiarize members with the planning process. The BLM also met with the RAC on June 11, 2015, during the public scoping period. On November 10, 2016, the BLM met with the RAC to provide an update on RMP development and get the RAC's input on the preliminary alternatives. The BLM will continue to consult with the RAC throughout the development of the Eastern Colorado RMP/EIS.

4.3. LIST OF PREPARERS

An IDT of resource specialists from the BLM (Table 4.5) and specialists from independent consulting firms (Table 4.6) prepared this Draft RMP/EIS. Under guidance and direction from the BLM and with the help of cooperators and input from the public, these specialists developed the draft alternatives (Chapter 2 and Appendix A), assessed potential effects from the alternatives (Chapter 3 and Appendix B), and wrote the other chapters of this document.

Table 4.5. BLM Interdisciplinary Team

Name	Role/Responsibility
Justin Abeles	Aquatic Wildlife, Wetlands and Riparian Resources
Keith Berger	Field Manager
Gordon Bowman	Geographic Information Systems
Jeff Brown	Renewable Energy
Stephanie Carter	Solid Minerals
Chris Cloninger	Vegetation, Livestock Grazing
Dave Gilbert	Aquatic Wildlife, Wetlands and Riparian Resources
John Lamman	Invasive Species, Vegetation, Livestock Grazing
Emily Latta	Terrestrial Wildlife, Special Status Species
Marie Lawrence	Technical Writing and Editing
Kalem Lenard	Visual Resources, Lands with Wilderness Characteristics, Recreation, Travel and Transportation Management, National and State Scenic and Historic Byways, National Trails, Wilderness and Wilderness Study Areas
Chad Meister	Air Resources and Climate
Jessica Montag	Social and Economic Values
Jeremiah Moore	Forestry
Molly Purnell	Geographic Information systems
Aaron Richter	Fluid Minerals
Matt Rustand	Terrestrial Wildlife, Special Status Species
Linda Skinner	Visual Resources, Lands with Wilderness Characteristics, Recreation, Travel and Transportation Management, Areas of Critical Environmental Concern, National and State Scenic and Historic Byways, National Trails, Wilderness and Wilderness Study Areas
John Smeins	Project Manager, Soil Resources, Water Resources, Areas of Critical Environmental Concern, Wild and Scenic Rivers
Melissa Smeins	Paleontological Resources, Fluid Minerals, Coal, Public Health and Safety
Roy Smith	Wild and Scenic Rivers
Glenda Torres	Wildland Fire and Fuel Management
Greg Valladares	Lands and Realty
Monica Weimer	Cultural Resources, Tribal Uses and Interests, National Trails
Jeff Williams	Vegetation, Livestock Grazing

Table 4.6. Independent Consulting Firms

Firm	Role/Responsibility
ICF	Interdisciplinary Team
Booz Allen Hamilton	Social and Economic Values
EMPSi	Public Scoping

4.4. DISTRIBUTION AND AVAILABILITY OF THE DRAFT RMP/EIS

The BLM published a notice of availability in the *Federal Register* to notify the public of the availability of the Draft Eastern Colorado RMP/EIS. This notice marked the beginning of the 90-day public comment period. The Draft RMP/EIS is available through the project website, and notification was sent out to the project mailing list, cooperating agencies, and tribal representatives. The BLM distributed a news release to media contacts and posted it on the project website and sent a newsletter to the project mailing list. The BLM provided a notification of availability of the Draft RMP/EIS to local and tribal governments and agencies (Table 4.7). Individuals and organizations may review the document on the project website.

Table 4.7. Draft RMP/EIS Notification

Local Governments (Counties, Cities, Towns)	
Adams County	Lake County
Arapahoe County	Larimer County
Baca County	Las Animas County
Bent County	Lincoln County
Boulder County	Logan County
Broomfield County	Morgan County
Chaffee County	Otero County
Cheyenne County	Park County
Clear Creek County	Phillips County
Crowley County	Prowers County
Custer County	Pueblo County
Denver County	Saguache County
Douglas County	Sedgwick County
El Paso County	Teller County
Elbert County	Washington County
Fremont County	Weld County
Gilpin County	Yuma County
Huerfano County	City of Aurora
Jefferson County	Town of Buena Vista
Kiowa County	Town of Silver Cliff
Kit Carson County	Town of Westcliffe
Tribal Governments	
Apache Tribe of Oklahoma	Northern Cheyenne Tribe
Cheyenne and Arapaho Tribes of Oklahoma	Northern Ute Tribe
Cheyenne River Sioux Tribe	Oglala Sioux Tribe
Comanche Nation of Oklahoma	Pawnee Tribe

Distribution and Availability of the Draft RMP/EIS

Local Governments (Counties, Cities, Towns)	
Crow Creek Sioux	Rosebud Sioux Tribe
Eastern Shoshone	Southern Ute Tribe
Jicarilla Apache Nation	Standing Rock Lakota Tribe
Kiowa Tribe of Oklahoma	Ute Mountain Ute Tribe
Northern Arapaho Tribe	-
Colorado State Agencies	
Colorado Department of Agriculture	Colorado Department of Public Health and Environment
Colorado Department of Natural Resources	-
U.S. Department of the Interior	
BLM • Colorado State Office • Washington, D.C.	U.S. Fish and Wildlife Service
National Park Service	-
Other Federal Agencies	
U.S. Department of Agriculture, Forest Service	U.S. Environmental Protection Agency
Other Agencies	
Colorado Springs Utilities	Southeastern Water Conservancy District
Denver Water	Upper Arkansas Water Conservancy District
Pueblo Board of Water Works	Upper South Platte Water Conservancy District

Eight public meetings will be held throughout the public comment period for this Draft RMP/EIS. One meeting will be held in each of the following locations: Cañon City, Colorado Springs, Denver, Fairplay, Greeley, Leadville, Salida, and Walsenburg. These public meetings will be structured in an open house format with BLM specialists available to provide information on the Draft RMP/EIS, including the range of alternatives, impact analysis, and the planning process.

The Proposed RMP/Final EIS will respond to all substantive comments on the Draft RMP/EIS received during the 90-day public comment period. The ROD will then be issued by the BLM after release of the Proposed RMP/Final EIS, the Governor's consistency review, and any resolution of protests received on the Proposed RMP/Final EIS.

CHAPTER 5. REFERENCES

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